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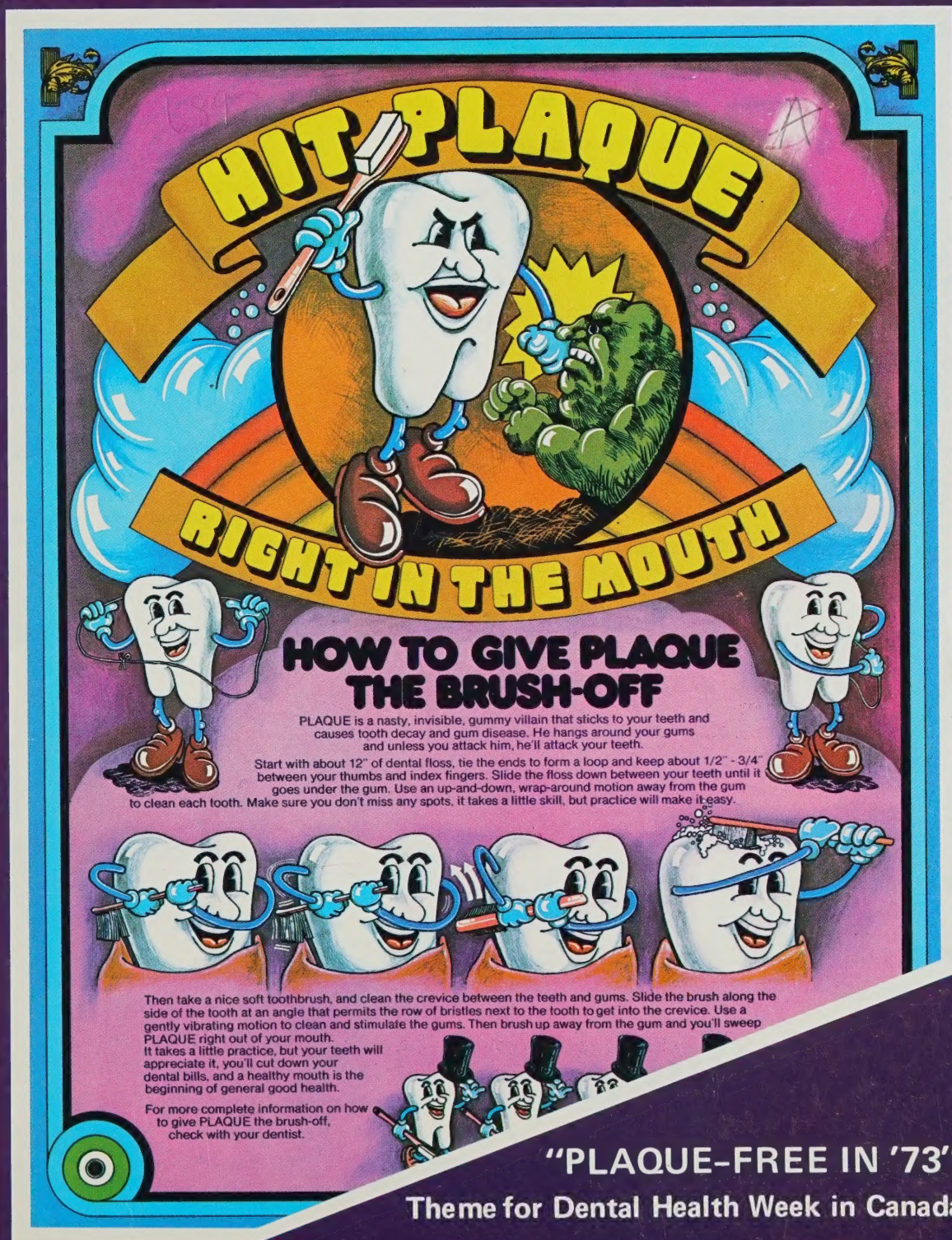


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JOURNAL

of the Canadian Dental Association
de l'Association Dentaire Canadienne
Jan 1973/Volume 39/No 1



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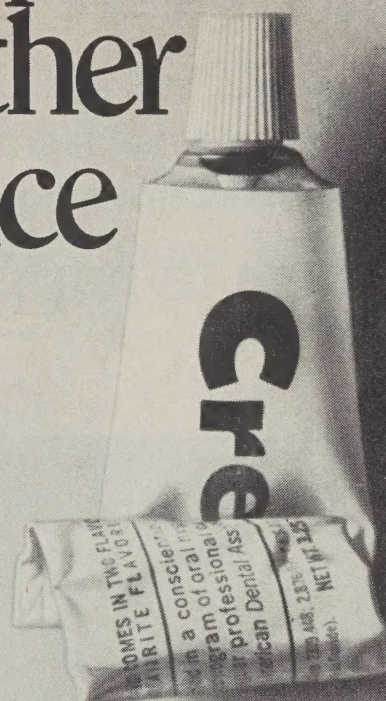
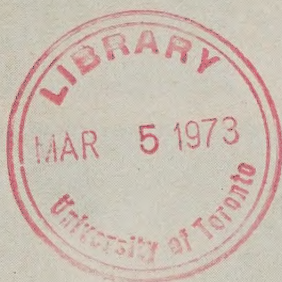
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5. J. Dental Res., 39:871, 1960
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15. J. Canad. Dent. Assoc., 36:262, 1970

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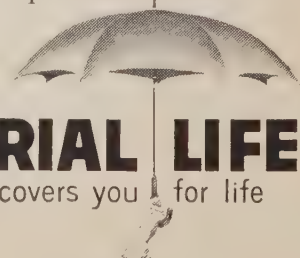
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Announcements/Avis

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Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont, Oct 2-5
1975 St. John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1973 Sydney, Australia, July 15-20

Continuing Education

Dental Handicapped

Dalhousie. Dental care for the handicapped. Guest faculty. Feb 22-23, 1973. Regis unlimited. \$50
Toronto. Dental care for the handicapped child. J. A. Hargreaves. Feb 12-13, 1973. Regis limit 6. \$60

Dental Materials

Alberta. Use of resilient materials in prosthetic dentistry. W. T. Harley. Feb 5, 1973. Regis unlimited. \$25
Toronto. Recent developments in dental materials. D. C. Smith. Feb 26-27, 1973. Regis limit 6. \$100

Endodontics

British Columbia. Endodontics for the general practitioner. C. Ames and W. C. Weinstein. Feb 4, 1973. Regis limit 20. \$35
Toronto. Endodontics. J. M. Phillips. Feb 7-9, 1973. Regis limit 10. \$100

Occlusion

Western Ontario. Occlusal correction of the natural dentition. D. S. Moore. May 7-12, 1973. Regis limit 10. \$300

Operative Dentistry

Western Ontario. New concepts in operative dentistry. R. E. Jordan.

Mar 9, 1973. Regis limit 12 dentist and hygienist teams. Dentist \$100; hygienist \$50

Oral Surgery

Toronto. Oral surgery. P. T. Smylski. Mar 19-23, 1973. Regis limit 12. \$100

Orthodontics

Toronto. Prerequisite orthodontics for the general practitioner. R. O. Fisk. Apr 9-13, 1973. Regis limit 25. \$150
Toronto. Advanced orthodontic diagnosis emphasizing cephalometric radiography for the general practitioner. B. Hemrend. May 7-8, 1973. Regis limit 5. \$80
Toronto. The activator in pre-orthodontic guidance and corrective treatment procedures. D. G. Woodside. May 28-29, 1973. Regis limit 30. \$150
Toronto. Orthodontic technical instruction for the general practitioner. D. G. Woodside. June 4-5, 1973. Regis limit 10. \$100

Paedodontics

British Columbia. The child patient: the key to preventive dentistry. Dr. Olsen. May 18-19, 1973. Regis limited. Dentists \$50; dental hygienists \$20
Toronto. Paedodontics. J. A. Hargreaves. May 2-4, 1973. Regis limit 20. \$80

Periodontics

British Columbia. Periodontics. Dr. Hall. Feb 23-24, 1973. Regis limited. Dentists \$50; dental hygienists \$20
British Columbia. Recognition and control of periodontal disease. Ms. Voris and Ms. Hoople. Regis limit 20. \$40
Toronto. Periodontics. J. E. Speck. Mar 7, 14, 21, 28 and Apr 4 and 25, 1973. Regis limit 12. \$100

Plaque Control

British Columbia. Control of plaque. Ms. Phillips and Ms. Weich. Mar 30, 1973. Regis limit 20. Dental auxiliaries \$15

Practice Administration

British Columbia. Practice management. Dr. Gardner. Mar 3-4, 1973. Regis limited. Dentists \$50; dental assistants \$10

Preventive Dentistry

Dalhousie. Changing concepts in prevention and treatment of dental caries. Maury Massler. May 14-15, 1973. Regis unlimited. Fee to be determined
Toronto. Preventive dentistry. R. C. Burgess. Apr 25-27, 1973. Regis limit 20. Dentists \$50; dental assistants \$20; dental hygienists \$20

Prosthodontics/Crown and Bridge

British Columbia. Partial coverage for crown and bridge. A. Bowman and Dr. Squire. Mar 9-10, 1973. Regis limit 20. \$70

Prosthodontics/Partial (removable)

Toronto. Removable partial dentures. G. A. Zarb. Apr 2-4, 1973. Regis limit 10. \$100
Western Ontario. Treatment planning and the use of removable appliances in general practice. A. W. Eastwood. Feb 15-16, 1973. Regis limit 25. \$80

Radiology

British Columbia. Dental radiology. F. W. Musaph. Feb 16-17, 1973. Regis limit 16. \$25
Western Ontario. Radiography for dental assistants. J. A. Reid. May 7-8, 1973. Regis limit 8. \$50
Western Ontario. Radiography for dental hygienists. J. A. Reid. May 10-11, 1973. Regis limit 8. \$50

Restorative Dentistry

Alberta. Oral diagnosis. C. E. Hawrish and H. M. Dick. May 10-11, 1973 in Calgary. \$60
British Columbia. Large amalgam restorations — lectures. S. H. Jacobson. Feb 17, 1973. Regis limit 25. Dentists \$30; dental assistants \$5
British Columbia. Large amalgam restorations — lectures and clinical course. S. H. Jacobson. Feb 17-19, 1973. Regis limited. \$125
Toronto. Advanced restorative dentistry. J. H. Hibberd. May 22-25, 1973. Regis limit 15. \$100

Miscellaneous

Toronto. Office emergencies. One day course. R. S. Locke. Feb 5, 12, 19, 26; Mar 5, 12, 19, 26; Apr 2, 9, 16, 1973; 7:30 pm to 9:00 pm. Regis limit 15. \$20



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References:

1. Buonocore, M. G., JADA, May 1971.
2. McCune, R. J. and Cvar, J. F., IADR Meeting, March 21, 1971.

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Mumps following endodontic treatment

Recently I referred a twenty-five year old female patient, who was otherwise in good health, to an endodontist for root canal therapy of a lower left second molar (Fig 1). According to the endodontist the treatment went well; radiographically, the result looked good (Fig 2). For a few days following thereafter the tooth felt sore; however, this sensitivity subsided within the week. The tooth was subsequently prepared for a full crown restoration and fitted with a temporary crown. A week later impressions were made.

Three weeks later the patient developed an extremely large swelling on the same side of the jaw at the angle of the mandible and extending lingually to the second molar. The tooth was firm, not sensitive to percussion, and showed radiographic abnormality at this time (Fig 3). The third molar was also vital, firm and not sensitive to percussion. There was no evidence of any periodontal abnormality.

Given the location of the swelling under the inferior border of the mandible at the angle, the differential diagnosis included mumps with uni-

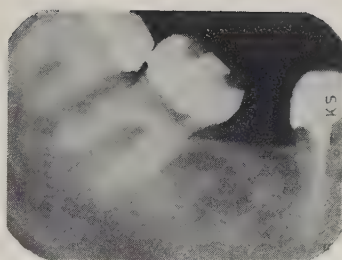


Fig 1

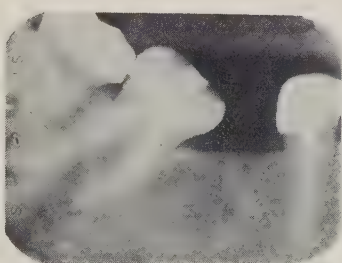


Fig 2

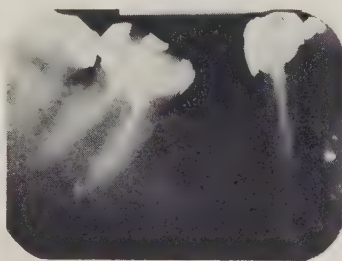


Fig 3

lateral swelling, a blocked salivary gland or barotitis.

I referred the patient to an otorhinolaryngologist who made a definitive diagnosis of mumps. By the time this physician saw her the swelling had become bilateral.

*Mark Lazare, DDS
612 St. John's Road
Pointe Claire 720, Que*

Dental manpower concepts

"Re-orientation about dental manpower concepts," an article by Dr. D. W. Lewis published in the September issue of the Journal focused on a strange paradox developing within the profession.

On the one hand we hear (or hear of) senior dental personnel stating that either there is no real shortage of dentists or that the additional numbers required are quite small. Conversely, the most common reason given for not entering into broad based population dental care programs is that there is a lack of sufficient dental personnel to provide the services.

I certainly appreciate Dr. Lewis' argument. The results of many epidemiological investigations (usually the young) clearly demonstrate that we have a long, long way to go in meeting the dental health needs of our population.

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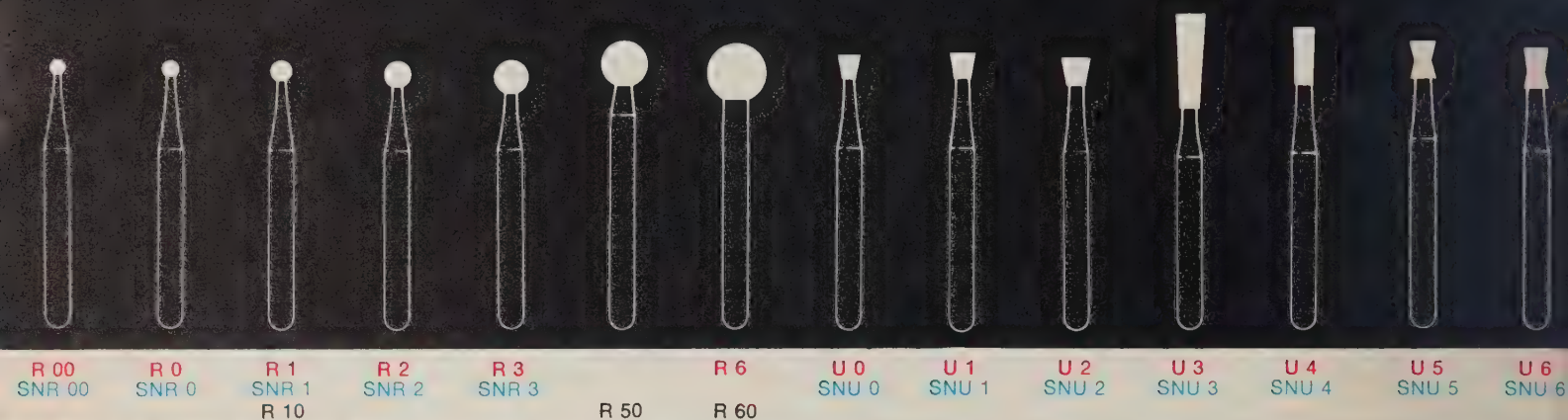
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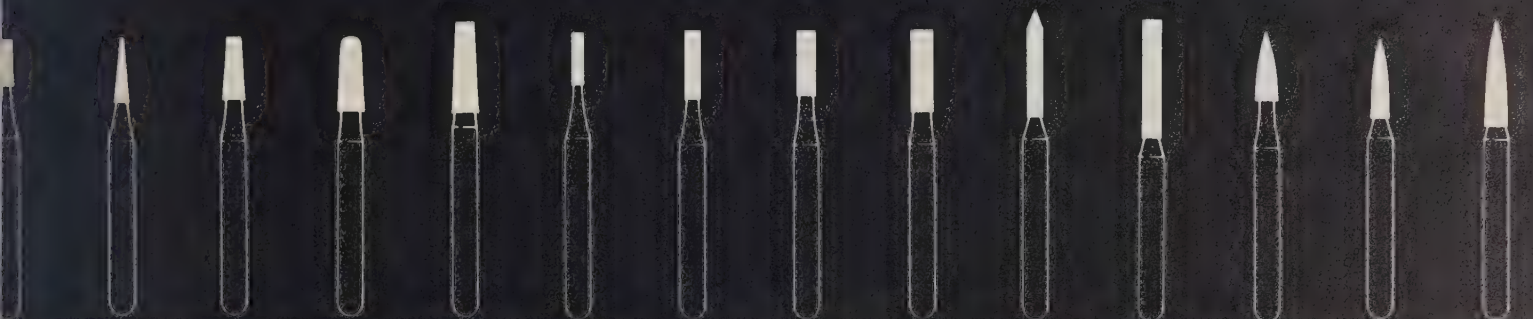


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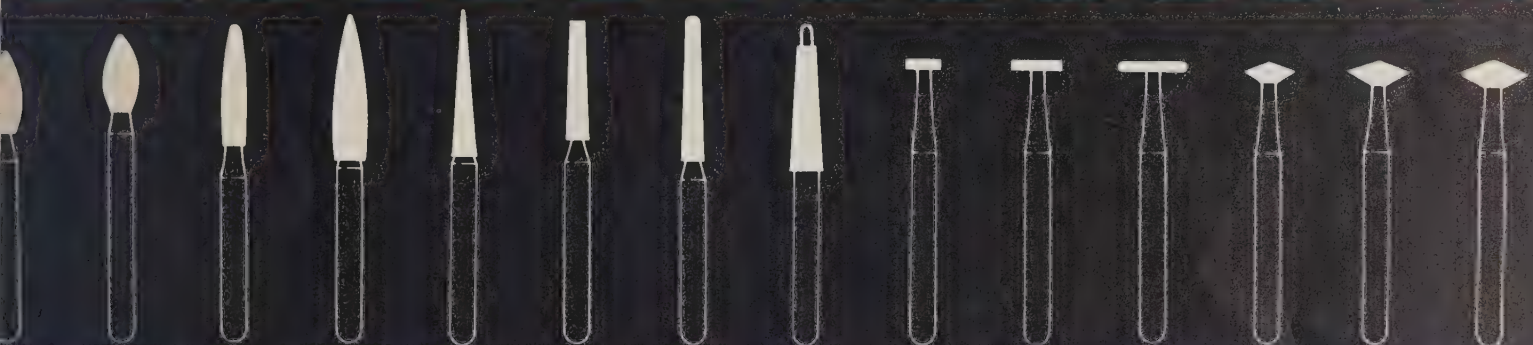
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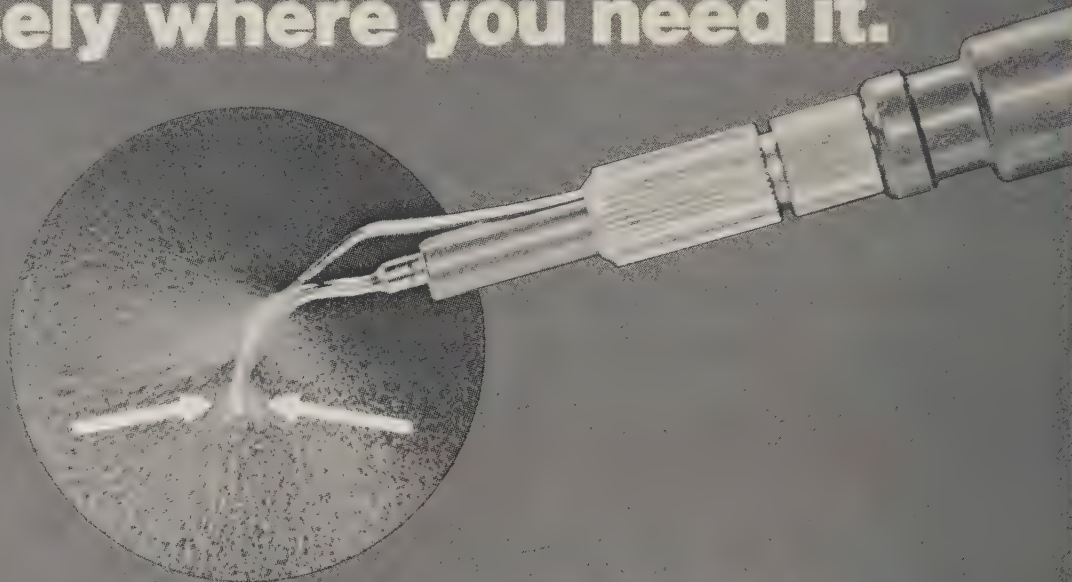
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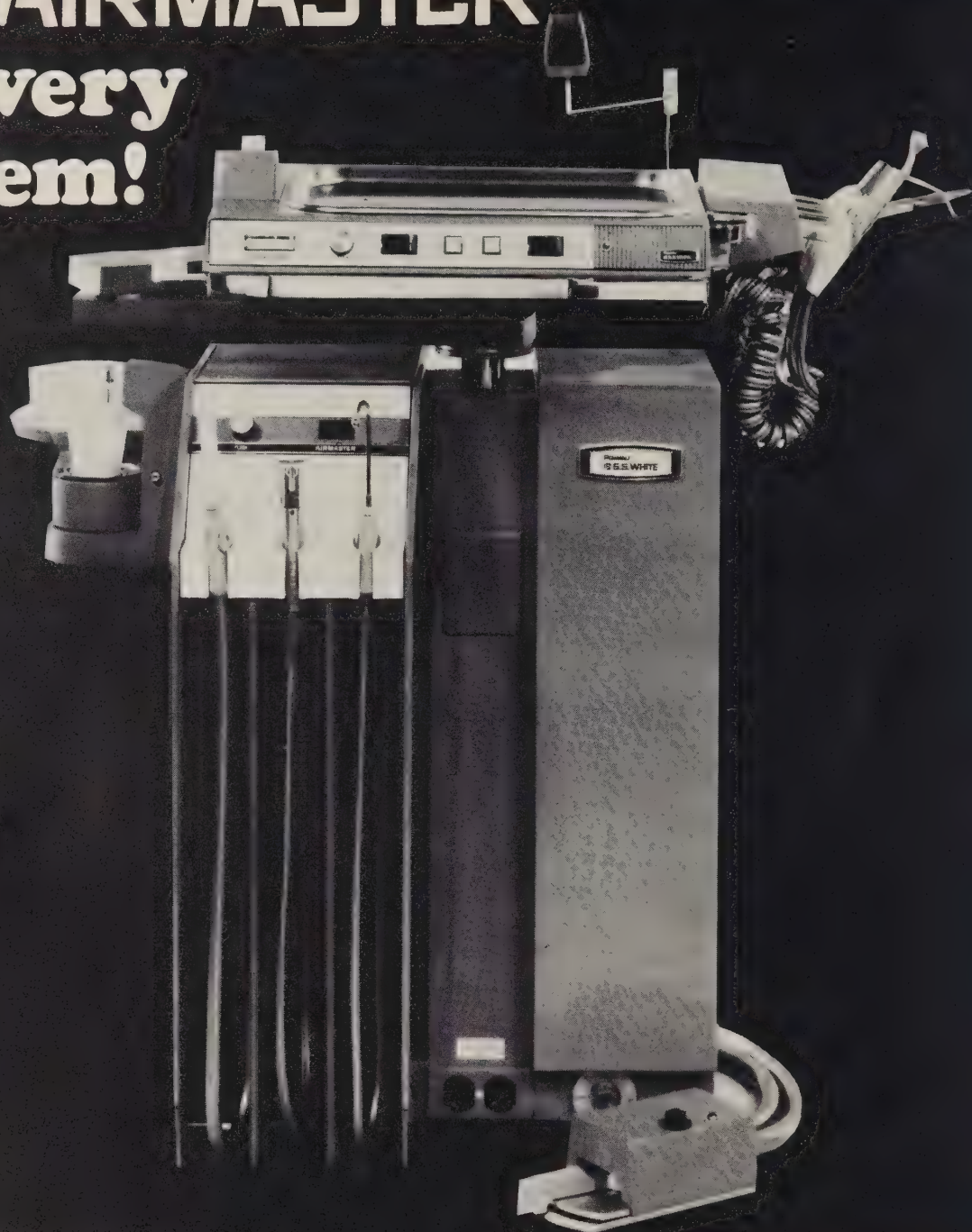
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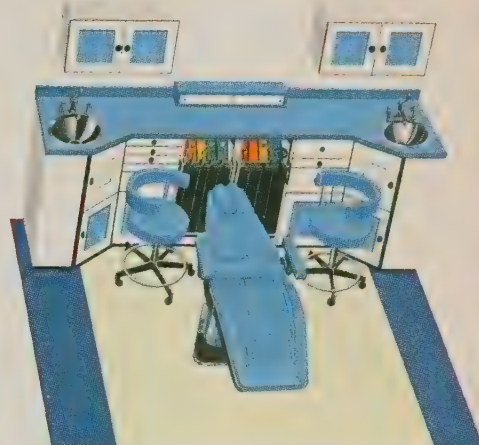
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The transformation of the capital into a planned metropolitan area has been the dual responsibility of the National Capital Commission and the City of Ottawa since 1959. At that time a long range master plan was adopted for the conservation, development and improvement of the national capital region that will cover more than 1,800 square miles surrounding the Ottawa-Hull area.

The controlling agencies are concerned with open areas and green spaces within the city proper, green belt areas in the surrounding countryside, parkways, removal of rail lines, the control of site locations for all future government buildings and public structures, and the control of private developments by business, industry and professions.

Under the advisement and control of the city and the National Capital Commission, the Canadian Dental Association has prepared its plans for a national headquarters to be located on Alta Vista Drive, an attractive area that has been designated for health-science facilities.



EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

CDA Headquarters to Ottawa!

Since there has been much talk of late about the Association moving its headquarters to Ottawa, a brief summary of related past, present and projected events seems in order.

Although the Association's Headquarters Property Committee in several of its annual reports stressed the need for more adequate headquarters facilities than are available at 234 St. George Street in Toronto, it was not until 1970 that the Board of Governors took the matter in hand. With the information that the present building facilities are inadequate and inefficient, and with strong support from most of the corporate members for the principle of moving to Ottawa, the Board at its 1970 meeting directed that a small committee be established to look into all matters relative to a possible move to Ottawa.

With services to CDA members its prime motivating factor, the Board also directed in 1970 that a headquarters management study be undertaken. New and enlarged programs had been proposed for the Association, including an expansion of the overall communications services, and the Board was looking for assurance that its programs would be implemented effectively.

The management study, submitted under the title "Canadian Dental Association Headquarters Organizational Review — January 1971," concluded, among other things, that new and enlarged programs

could not be effectively implemented within the present physical structure and therefore a definite move should be considered.

In 1971 an ad hoc committee established to report on Association priorities gave the move of our national headquarters to Ottawa a very high priority. The committee recommended that a well situated property on Alta Vista Drive in Ottawa, immediately adjacent to the attractive new national headquarters for the Canadian Medical Association, be purchased. The land in the Alta Vista area is controlled and owned by the National Capital Commission and has been zoned a health services area to include several hospitals and perhaps a medical school. The location therefore seemed a most desirable site for dentistry's new national headquarters.

In reaching its decision the Board considered a number of factors very carefully, particularly the following ones:

(1) the present headquarters building is no longer adequate to house essential staff;

(2) most other national health associations are now located in Ottawa;

(3) strong recommendations from national health associations now located in Ottawa that there are significant political advantages to be gained by being in the national capital;

(4) each year that construction of a new building is delayed, the costs escalate by approximately 8 per cent; and

(5) the property selected as most suitable for a new headquarters in Ottawa must be built on within three years or returned to the National Capital Commission at the purchase price.

At its 1971 fall meeting the Board of Governors approved the purchase of the National Capital Commission property on Alta Vista Drive. At the same time, the Executive Council was also authorized to select an architect, develop building plans and present a detailed report, including proposals for financing, to the Board at the 1972 annual meeting.

The land was purchased and an architect selected. The architect, working closely with a small building committee, made an in-depth study of the present and projected headquarters requirements and designed an attractive building: one that is compatible with the Ottawa location and one that takes into consideration the Association's present requirements as well as those for short and long term projections.

(Continued on page 54)

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- All tips provide cavitation, cooling and lavage with internal water delivery. No external tube to adjust. Water always hits working area, visibility is increased.
- Handpiece is light and easy to handle. No transfer of vibration from metal to your fingers.
- Sterilize tips by the method you prefer: Autoclaving, dry heat, germicidal disinfectants.
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- The entire Sonus unit, including the stack, is guaranteed for 1 year; tips for 90 days.
- Solid state circuitry insures years of trouble-free operation.
- Unique stack (power transducer) design keeps power level at maximum: 18,000 CPS, the optimum safe level for tooth structure and tissue.
- Sonus is completely serviceable in your office. No need for lengthy return to factory.
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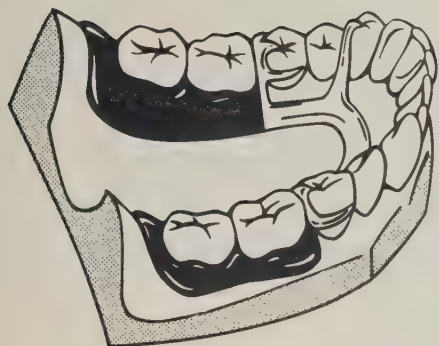
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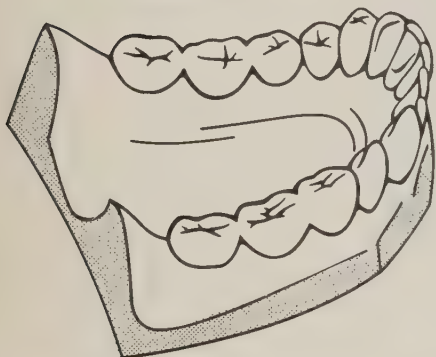
THE ANTI-REMOVABLES

ENDOSTEAL BLADE IMPLANTS (Linkow)

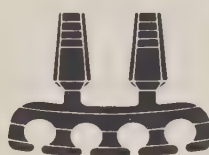


REMOVABLE PARTIAL PROSTHESIS: A tried and proven technique when no posterior abutments are available, or when the edentulous span is too long. **Now...**

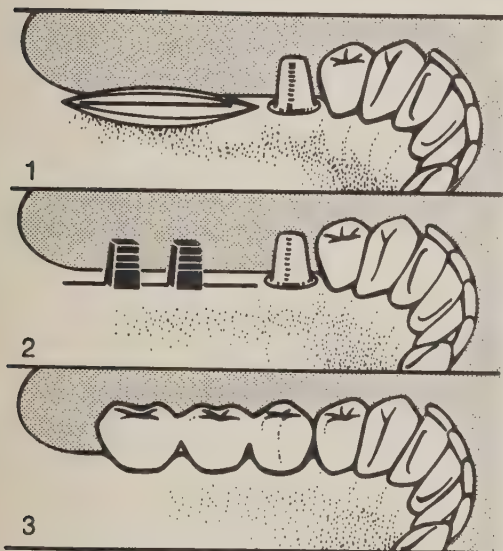
A NEW OPTION IN TREATMENT PLANNING



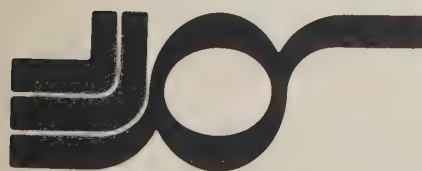
FIXED PARTIAL PROSTHESIS: For the same case, you may be able to provide the equivalent of the roots of teeth, for use as abutments for fixed bridges. **ENDOSTEAL BLADE IMPLANTS (Linkow)**



An appropriate Implant. Note the newest design improvements available to the profession.



- 1 The natural abutment is prepared. The edentulous area is shown with the gingiva reflected, and the groove properly channelled.
- 2 The Endosteal Blade Implant (Linkow) correctly seated. The tissue is coated and sutured.
- 3 **FIXED PARTIAL PROSTHESIS** in position. Many patients may no longer be required to wear removable dentures. Why not investigate?



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17

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CAUSTINERF PREDOSSED PELLETS

PAINLESS Ensures completely painless devitalisation and mummification of the deciduous pulp.

RELIABLE May be left permanently in cavity with no interference with normal exfoliation.

SAFE Is arsenic-free and has unlimited shelf life.

SIMPLE Is easy to use from plastic dispenser containing 10 predosed treatment pellets.

SUCCESSFUL Prevents any after pain and ensures success of treatment.



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Please supply:

- ☐ 100 Caustinerf predosed treatment pellets at \$15.00
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The Association

Plaque-free in '73: theme for National Dental Health Week

The Canadian Dental Association, in cooperation with its 10 provincial corporate members, is all set to launch Canada's first national Dental Health Week February 4-10, 1973. The dates were established to coincide with the American Dental Association's National Children's Dental Health Week, an annual event.

The theme for observance of this week in both Canada and the US is "Plaque-free in '73."

CDA's Bureau of Public Information has developed organizational kits containing: program planning suggestions; suggested talks for student and adult audiences; a series of six newspaper articles; the Association's public relations manual; a sample "proclamation form" to be signed by the local mayor; educational pamphlets and posters; materials for newspaper columns and radio spot announcements and lists of other materials available from headquarters. One hundred of these kits have been distributed among the provincial associations.

In addition, the film "Think about it/Pensez-y" produced by dental students for the CDA is available on free loan during national Dental Health Week.

Each provincial association has been asked to submit a report on their Dental Health Week program. These reports will assist CDA's Bureau of Public Information in evaluating the success of this nation-wide promotion and will provide some guidelines in the future planning of what is hoped to be an annual observance.



Mrs. G. Harold Craig of Belleville, Ont, receives a fellowship on behalf of her late husband from Dr. Allan Copping, chairman of the Academy of General Dentistry committee on continuing education. Dr. Craig, who was AGD national director for Eastern Canada at the time of his death earlier this year, had qualified for the fellowship which requires 500 hours of continuing education. The presentation to Mrs. Craig was made during the AGD annual meeting held in San Francisco last October.

Miss Nicholl heads up new Office of Student Affairs

Beverley Nicholl has been appointed secretary of the Association's newly formed Office of Student Affairs.



Beverley Nicholl

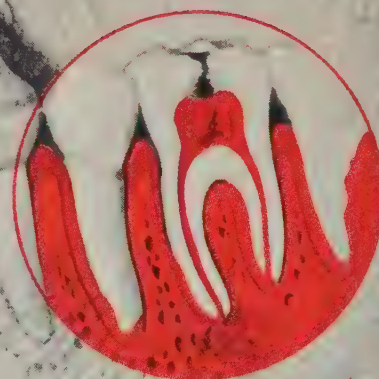
The creation of this new office, centralizing headquarters' student activities under one head, was undertaken to better meet the needs of the growing

numbers of students involved and interested in the affairs of the Canadian Dental Association and to provide the increased administrative assistance needed by the various committees serving in this rapidly developing field.

The Office of Student Affairs is designed: to improve the liaison between students and headquarters staff; to encourage involvement of student members in the affairs of the Association; and to actively strive for total enrolment of all dental students in the CDA. (At the present time, student membership stands at 841.)

In addition to her new responsibilities as secretary of the student affairs office, Miss Nicholl is the administrator of the Dental Aptitude Test Program. Before joining the staff at CDA she was employed by the Ontario Institute for Studies in Education where she worked directly with graduate students of the University of Toronto.

when patients
have this problem
and penicillin
allergy too



Dalacin C

(clindamycin, Upjohn)

“...may be used as a penicillin substitute for the patient's protection during traumatic dental procedures.”¹

To determine the effectiveness of Dalacin C in preventing post-extraction infection, 75 patients were treated with Dalacin C pre-operatively. Immediately following surgery, blood was withdrawn and observed for bacterial growth. The results showed that Dalacin C significantly reduced the incidence of post-extraction bacteræmia.¹

<i>Dose Dalacin C</i>	<i>No. Patients</i>	<i>No. Bacteriologically Positive Blood Cultures Following Surgery</i>
Control Group (no antibiotic)	100	49
150 mg q.i.d. for 3 days before surgery	25	0
300 mg - 2 hours before surgery	75	4

Upjohn

¹. de Vries, J., et al. (1972). J. Canad. Dent. Assn., No. 2, p. 63.



Dalacin C

for dependable prevention or control of dental infections

- bactericidal against streptococci and staphylococci (including penicillin-resistant strains)
- well tolerated; hypersensitivity reactions are very infrequent
- available as capsules for adults and as a suspension for children

Indications: Dalacin C is indicated in infections caused by organisms susceptible to its action, particularly streptococci, pneumococci, and staphylococci. As with all antibiotics, *in-vitro* susceptibility studies should be performed.

DOSAGE AND ADMINISTRATION

DALACIN C CAPSULES

Adults

Mild to moderately severe infections: 150 mg (one capsule) every six hours.

Severe infections: 300 mg (two capsules) or more every six hours.

Children (over one month of age)

Average infections: 10 mg/kg/day (5 mg/lb/day) divided into three or four equal doses.

Severe infections: 16 mg/kg/day (8 mg/lb/day) or more if indicated by the clinical situation, divided into three or four equal doses.

DALACIN C GRANULES

Children (over one month of age)

Average infections: 12 mg/kg/day (6 mg/lb/day) divided into three or four equal doses.

Severe infections: 20 mg/kg/day (10 mg/lb/day) or more divided into three or four equal doses.

Absorption of Dalacin C is not appreciably modified by ingestion of food and Dalacin C may be taken with meals with no significant reduction of the serum level.

Note: With β -hemolytic streptococcal infections, treatment should continue for at least 10 days to diminish the likelihood of subsequent rheumatic fever or glomerulonephritis.

Cautions: Generally well tolerated. Usual antibiotic side effects – abdominal discomfort, loose stools or diarrhoea, nausea, vomiting. Transient neutropenia (leukopenia), or abnormalities in liver function tests have been observed in a few instances. Mild hypersensitivity reactions (skin rash and urticaria) have been observed on rare occasions.

Use with caution in patients with a history of asthma and other allergies. As with other antibiotics, periodic liver function tests and blood counts should be performed during prolonged therapy.

Not indicated in patients who have demonstrated sensitivity to lincomycin. Safety in pregnancy not established. Dalacin C is not indicated in the newborn.

AVAILABILITY

Adults:

150 mg Capsules – Each capsule contains clindamycin hydrochloride hydrate equivalent to 150 mg clindamycin base. Supplied in bottles of 16 and 100.

Children:

75 mg Paediatric Capsules – Each capsule contains clindamycin hydrochloride hydrate equivalent to 75 mg clindamycin base. Supplied in bottles of 16 and 100.

Paediatric Granules – When the contents of the bottle are dissolved in the quantity of distilled water indicated on the label, each 5 ml contains clindamycin-2-palmitate hydrochloride equivalent to 75 mg clindamycin base. Supplied in 60 ml and 100 ml bottles.

Detailed information available upon request.

728 REGISTERED TRADEMARK: DALACIN CE 6667.1

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Canada and the Provinces

Dentists urged to report all adverse drug reactions

During the 1972 annual meeting of the Consumers' Association of Canada the delegate body passed a resolution calling for action from a number of professional associations in urging their members to report all adverse drug reactions.

The resolution reflects the concern of CAC members with regard to the need for a full scale therapeutic monitoring system in Canada. The three main areas of concern set forth by CAC as the basis on which the resolution was drafted are as follows:

1. There is evidence that adverse reactions in humans to therapeutic drugs is a serious problem of which the full content is concealed by the absence of a large-scale reporting system for such reactions.

2. There is concern among international medical bodies about the appropriate use of drug treatment, of long-term effects of drugs, of the identification of a predisposition to drug reactions and of the need for thorough pharmacological study of the effects of drugs.

3. The seriousness of the problem of adverse drug reaction has been acknowledged by eminent medical authorities in several other countries and strong recommendations have been made by them for the establishment of national drug monitoring systems.

The resolution presented by CAC delegates reads: "Be it resolved that CAC support in every possible way the therapeutic drug monitoring program established by the Department of National Health and Welfare; that it request the Canadian Medical Association, the Canadian Society of Hospital Pharmacists, the Canadian Pharmaceutical Association, the Canadian Dental Association and the Canadian Veterinarian Association to cooperate with the Department of National Health and Welfare by immediate reporting of all adverse drug reactions in order to facilitate the collating, analyzing and prompt feedback of this information; that it urge the publicizing of findings amongst all those responsible for the prescribing of therapeutic drugs so that

the harmful effects of these drugs may be reduced as much as possible."

Dentists across Canada are urged to cooperate in this important program. Comments or information on adverse drug reactions should be forwarded to: Mr. Clive Goodwin, chairman, Resolutions Implementation, Consumers' Association of Canada, 100 Gloucester St, Ottawa, Ont. K2P 0A3.

Mercury absorption by dental personnel under study in Ontario

The July, 1972, issue of the Journal carried a report on a pilot study on mercury absorption by dental personnel conducted in Ontario. This investigation demonstrated that 10 per cent of those tested showed elevated mercury levels.

The Department of National Health and Welfare has now approved a grant to cover further investigation. At least 1,000 volunteers from the dental profession in Ontario are needed to participate in this project.

The principal investigators, Professors J. H. Hibberd and D. C. Smith of the University of Toronto's Faculty of Dentistry, are sending information, application forms and kits to all dentists in the province and would appreciate their cooperation and that of their assistants. No charge will be made for the tests and all results will be communicated in confidence.

Ontario dentists and dental assistants are strongly urged to participate in this important study.

International Items

ADA's Council on Research studies acupuncture

The use of acupuncture for the control of pain was one of the topics reviewed by the American Dental Association's Council on Dental Research during its mid-November meeting.

Although the session was devoted to the research aspects of the general subject of pain and its control, much of the time was allotted to discussions of acupuncture techniques because of the recent flurry of inquiries from

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"PERSONAL ORAL HYGIENE"

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POH SPECIAL TOOTHBRUSHES

All styles are made of the finest soft nylon polished-tip bristles arranged on a narrow brush head to facilitate cleaning the crevices involved in personal oral hygiene.

STYLES: (1) 3-Row Staggered (2) 2-Row Professional (3) 3-Row Reg. (4) 4-Row Multi-Tuft (D) Junior Toothbrush

POH DENTAL FLOSS

Unwaxed, loosely turned, extremely strong, of the finest nylon fiber. Essential for scraping the bacterial mass from the interproximal surfaces of the teeth.

POH DISCLOSING WAFERS

A pleasant tasting red wafer that will stain the bacterial mass bright red when dissolved in the mouth.

FLOSS CADDY

A 2½ inch, very fine, pliable wire designed with a self-threading eye, facilitating the use of unwaxed floss under bridgework and appliances where threading is necessary.

SPECIAL INTRODUCTORY OFFER!

100 POH Disclosing Wafers
 10 POH Toothbrushes (choice of style)
 10 POH Dental Floss
 10 POH Instruction Sheets

\$5.00 Postpaid

(In Canada add \$1.00 for processing.)

(Offer limited to Dentists and Dental Hygienists.)

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Please send special POH offer of: 100 Disclosing Wafers, 10 Dental Floss, 10 Instruction Sheets and 10 Toothbrushes. (Indicate style of brush: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ D.)

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City _____ State _____ Zip _____

Check enclosed for \$5.00 (Canada \$6.00.)

both the profession and the general public. The council is preparing an association statement for the study and use of acupuncture in dentistry.

The council met at ADA headquarters and at Rush-Presbyterian-St. Luke's Medical Centre where acupuncture studies have been underway for about six months. A medical team under the direction of Dr. Max Sadove, chairman of the Department of Anaesthesiology, has been evaluating the technique for the control of pain on many patients over a long term period.

Council members observed the treatment of several patients afflicted with trigeminal neuralgia. Dr. Sadove's team began its investigation earlier this year using only needles, then added electrical impulses to the needles and later omitted the needles in some patients but continued the treatments with electricity applied to the surface of the skin.

Dr. Sadove reported that quite a number of patients treated with standard acupuncture seemed to improve, or actually improved.

Denturist's radio ads subject of legal suit

The Office of the Attorney General of New York has initiated legal action against Dentures Unlimited of Kingston, Ont., a denturist firm that has been advertising on radio stations in New York.

Authorities believe that representatives of the firm will not enter New York State to defend the suit. An injunction probably will be sought preventing any further advertising in the state. Such an injunction might deter other broadcast media from accepting advertisements from denturists' firms in the future.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on November 30, 1972:

Fixed Income Fund \$13.626;
Common Stock Fund \$30.882.

Total assets (market value) of the plan were \$14,380,620.58.

There were no portfolio purchases or sales during the preceding month.

Section 146(5) of the Income Tax Act permits tax free contributions of up to 20 per cent of earned income or \$4,000, whichever is less, to a personal retirement savings program.

The Royal Trust Company, trustee of the CDA Retirement Savings Plan, offers two separate investment media: a fixed income fund and a common stock fund. Contributions may be allocated wholly or partly to the funds of the contributor's choice. Transfers between funds are allowed without penalty.

The fixed income fund, confined to guaranteed government bonds, other guaranteed fixed income securities, debentures, preferred shares and other fixed income securities, offers excellent income with maximum security. The common stock fund, comprising Canadian and carefully selected American and other foreign stocks, has capital growth as its main objective.

No charges or commissions are payable on joining or withdrawing from the plan.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Deaths

Dimock, Karl Keith. 77. Windsor, NS. Dalhousie University, 1919. 1-12-72.

Survived by John and Gordon (sons); Mrs. Royce Fuller (daughter); Louis (brother); and Mrs. Gurney Jones (sister).

Lister, Goodridge Roberts. 83. Fredericton, NB. Baltimore College of Dental Surgery, University of Maryland, 1918. 12-12-72. Survived by Exa Pearl (wife); Mrs. Marie Chavannes (daughter); and Mrs. Josephine Lewis (sister).

Moses, Charles Hyman. 73. Toronto. Royal College of Dental Surgeons of Ontario, 1924. 26-12-72. Survived by Sadye (wife); James (son); Mrs. I. B. Rosen (daughter); Mrs. E. Ross (sister); and six grandchildren.

Nelson, Charles Lord. 66. Powell River, BC. University of Minnesota, 1929. 9-12-72. Survived by Donna (wife).

When Canadian dentists discovered ^N**222**[®] Tablets



kids were still wearing high-button boots

For more than half a century, Canadian dentists have been relying upon 222 Tablets to provide a full measure of patient-comfort. Today, 222 Tablets are more useful than

ever. Phenacetin-free, each tablet contains 375 mg. of acetylsalicylic acid, 30 mg. of caffeine citrate, and 8 mg. of codeine phosphate.

Dosage: Adults, one or two tablets one to three times a day. Children 10-14, one tablet one to three times a day. Children 5-10, one-half tablet one to three times a day.

Contraindications: Salicylate sensitivity, peptic ulcer.

Side effects: Skin rash, gastrointestinal bleeding, headache, nausea, vomiting, vertigo, ringing in the ears, mental confusion, drowsiness, sweating, or thirst may develop with average or large doses.

Full information on request.

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Association Dentaire Canadienne

Régime d'épargne-retraite

Garantie pour votre avenir — dégrèvement d'impôt pour le présent

Docteur:

Nous désirons vous informer que, débutant avec l'année d'imposition de 1972, le montant maximum contribuable au régime d'épargne-retraite de l'Association dentaire canadienne a été élevé de \$2,500 à \$4,000 annuellement (ou 20% du revenu gagné si celui-ci est moindre).

L'exemple ci-dessous vous indique l'épargne approximative qu'un participant qui a contribué le maximum peut obtenir sur l'impôt:

Revenu net annuel	Contribution déductible	Epargne sur l'impôt annuel		
		Célibataire	Marié	Marié (2 enfants)
\$20,000	\$4,000	\$1,772	\$1,715	\$1,699

Vous avez le choix, ou une combinaison, de ces trois fonds distincts:

FONDS A REVENU FIXE
FONDS D' ACTIONS ORDINAIRES
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Pour demande de renseignements écrire ou téléphoner à:

Canadian Dental Service Plans Inc.
230 St. George Street, Toronto 5
(416-925-6341)



La date finale des contributions
pour une déduction de l'impôt sur le revenu est le 28 février, 1973.



You may have heard someone say, "All carbide burs are the same". That statement is as absurd as this one, "All dentists' techniques are the same".

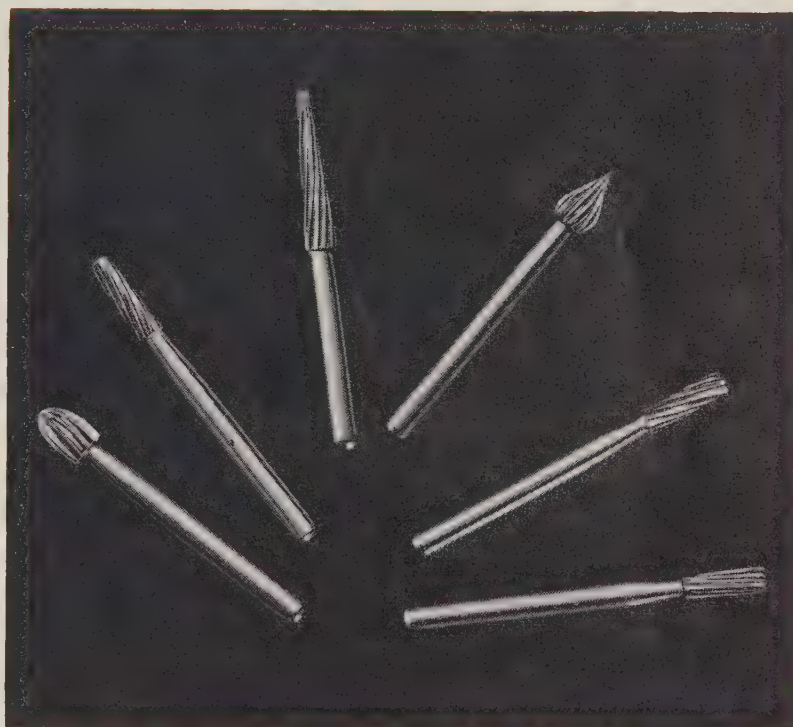
Jet Burs are made by Beavers Dental Products in Morrisburg, Ontario, who are pioneers in the development of dental burs.

There is no short cut to quality — even the automatic machines used to make Jet Burs were designed and built at Beavers.

Sometimes Jet Burs are in short supply — it will pay you to wait for the best.

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Finishing & Trimming
CARBIDE BURS

- ★ All have 12 cutting blades
- ★ Save time
- ★ Designed for use with composite materials
- ★ Permit fine precision work
- ★ Outwear all others



These new Finishing and Trimming Burs are designed for use with all composite materials (Jacket Crowns, Gold Amalgams and Porcelain).
The new shapes are — FLAME — CONCAVE CONE (extra long) — INVERTED TAPER (long) — EGG — STRAIGHT FINISHING — TAPER FINISHING (3 sizes of each)

Serving Canada for over 75 years

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Doctor, you may never want to purchase equipment again!

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- ☐ The leasing of new equipment and furnishings.
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L'Association

L'Université de Saskatchewan décerne un doctorat honorifique au Docteur McIntosh

L'Université de Saskatchewan a décerné récemment un doctorat honorifique en droit au docteur William G. McIntosh, directeur général de l'ADC et ambassadeur éminent de la profession dentaire canadienne dans le monde. Le docteur McIntosh est le premier membre de la profession à recevoir un tel honneur de l'Université. La présentation se déroula au cours de la collation des grades de l'automne.

Parmi les événements importants qui marquèrent cet événement, mentionnons la présence des premiers diplômés en chirurgie dentaire de l'Université de Saskatchewan. Le Collège de dentisterie, le neuvième au Canada, fut établi sur le campus en 1965 et le premier groupe de 10 étudiants s'y inscrivit en 1968.

Le docteur McIntosh est directeur général de l'ADC depuis 1965. En vertu de ses fonctions, il est chargé d'orienter la politique de la dentisterie canadienne. Il représente le Canada auprès de la Fédération dentaire internationale depuis 1965 et a été membre du Conseil de la Fédération et de la Commission sur la pratique dentaire.

Né à Hanley, Saskatchewan, le docteur McIntosh a fait ses études primaires à Prince-Albert. Il poursuit sa formation à l'Université de Saskatchewan en 1932-33 et obtint ses grades universitaires en chirurgie dentaire de l'Université de Toronto.

Le docteur McIntosh a exercé sa profession pendant quelques années à Trenton et à Oshawa avant de s'établir à Toronto, en 1938. Au cours de ses 18 dernières années de pratique privée, il se spécialisa en parodontologie. Il devint professeur-adjoint de parodon-

tologie à l'Université de Toronto, consultant aux Hospital for Sick Children et Sunnybrook Hospital. Au cours de la dernière grande guerre, alors qu'il était major dans le Corps royal dentaire canadien, le docteur McIntosh poursuivit des recherches en parodontologie.

Avant d'accéder au poste de président de l'ADC en 1959, il a fait partie de plusieurs comités et du Bureau de direction de l'Association.

Le docteur McIntosh est Fellow du Collège royal des chirurgiens dentistes du Canada, de l'American et International College of Dentists. Il est aussi membre de l'American Academy of Periodontology et de la Canadian Academy of Periodontology, dont il fut président de 1958 à 1959. Il fut aussi nommé membre honoraire de l'American Dental Association en 1967.

Le Canada

Le gouvernement albertain procède à un nouvel examen des professions

Les dentistes de l'Alberta seront encore soumis à une enquête par le Comité législatif sur les professions et les métiers qui tiendra au cours de l'année des audiences publiques. Le Comité revisera les lois provinciales actuelles, plus particulièrement celles qui touchent les professions et les métiers dont la gestion est autonome. Il s'attachera également à répondre aux questions suivantes:

— Les professions dont la gestion est autonome se préoccupent-elles de servir de la meilleure manière possible les intérêts du public?

— Les professions dont la gestion est autonome attachent-elles plus d'importance à leurs propres intérêts?

— Les professions détiennent-elles un contrôle parfait sur l'accessibilité à leur corporation? Ce contrôle ou ce manque de contrôle est-il souhaitable dans l'intérêt public?

— Les professions devraient-elles être régies par des associations ou des agences de contrôle distinctes?

— Le public devrait-il faire partie des Comités de discipline?

— Les professions devraient-elles détenir le droit de contrôler l'autorisation de la pratique?

— Les normes fondamentales des organismes autonomes devraient-elles faire l'objet d'une loi-cadre?

— Qui devrait être chargé d'établir les éléments de la formation requise pour les professions?

Le Comité présentera vraisemblablement le rapport de ses conclusions au gouvernement de l'Alberta au début de l'an prochain, et les modifications apportées à la loi, si elles se produisent, ne pourront se réaliser avant la session du printemps 1973.

Monsieur Claude Castonguay donne une approbation de principe à un projet d'étude et de consultation des comités de citoyens

Au cours des prochaines semaines, le Conseil des Affaires sociales et de la famille (CASF), organisme consultatif auprès du ministère des Affaires sociales, prendra l'initiative de mettre au point, en collaboration avec les intéressés, un programme d'étude-consultation auprès des comités de citoyens.

Le ministre des Affaires sociales, monsieur Claude Castonguay, a donné une approbation de principe à cette recommandation qui lui a été faite par le CASF à la suite de l'étude préliminaire effectuée par un comité spécial de cet organisme.

Cette étude-consultation aura pour principaux objectifs d'identifier comment et de quelle façon les comités de citoyens peuvent participer au développement des politiques sociales et quel support ils souhaiteraient recevoir du gouvernement.

Le ministre des Affaires sociales a déjà manifesté son intérêt à l'égard des comités de citoyens. C'est ainsi qu'il a recommandé au lieutenant-gou-

verneur en conseil de choisir parmi ces groupes un des membres de la Commission d'appel des allocations et de l'aide sociale; il a également autorisé les comités de citoyens à maintenir des kiosques d'information à l'intention du public dans les bureaux de l'aide sociale.

De plus, la Loi 65 sur les services de santé et les services sociaux prévoit que les membres des différents groupes socio-économiques seront appelés à prendre une large part dans l'orientation et l'administration des centres locaux de services communautaires (CLSC).

Les comités de citoyens, par l'originalité de leur voix, contribueront donc à identifier les moyens de s'associer aux travaux du Conseil des Affaires sociales et de la famille.

L'enseignement dentaire

Réaménagement des locaux de la faculté dentaire de McGill

Cérémonie d'ouverture

L'ouverture officielle des locaux récemment rénovés et agrandis de la Faculté dentaire de McGill se tenait au Montreal General Hospital le 8 novembre dernier. Des allocutions ont été prononcées à cette occasion par M. R. Bell, principal de l'Université McGill, M. R. McLean, vice-président du Montreal General Hospital, M. G. Pelletier, directeur du Service dentaire provincial, qui représentait M. Claude Castonguay, ministre des Affaires sociales et le Dr E. Ambrose, doyen de la Faculté dentaire de McGill.

Parmi les nombreux invités l'on remarquait la présence du Dr M. Archambault, secrétaire-registraire du Collège des chirurgiens dentistes du Québec, du Dr H. La Belle, président de l'Association des chirurgiens dentistes du Québec, du Dr J.-P. Lussier, doyen de la Faculté de chirurgie dentaire de l'Université de Montréal et du Dr P. Simard, directeur de l'Ecole de médecine dentaire de l'Université Laval.

Caractéristiques de la nouvelle clinique

Un service de prévention situé en avant de la clinique principale est doté



Présents à la cérémonie d'ouverture officielle de la Clinique Dentaire du McGill-Montreal General Hospital, sont (de gauche à droite) M. R. McLean, vice-président du Montréal General Hospital; Dr E. Ambrose, doyen de la Faculté dentaire McGill; M. R. Bell, principal de l'Université et Mme Bell.

d'un équipement audio-visuel moderne et des facilités permettant l'enseignement et la démonstration des diverses mesures préventives.

L'étendue de la clinique principale est la même; les cellules (cubicules) sont cependant plus spacieuses. La salle des fournitures a été agrandie et l'on a modifié l'éclairage et la décoration dans les laboratoires et le secteur réservé aux patients.

Des combinaisons de couleurs, allant du tournesol, au corail, au gingembre etc, créent une atmosphère plus gaie dans la clinique principale et dans un des pavillons du troisième étage. De

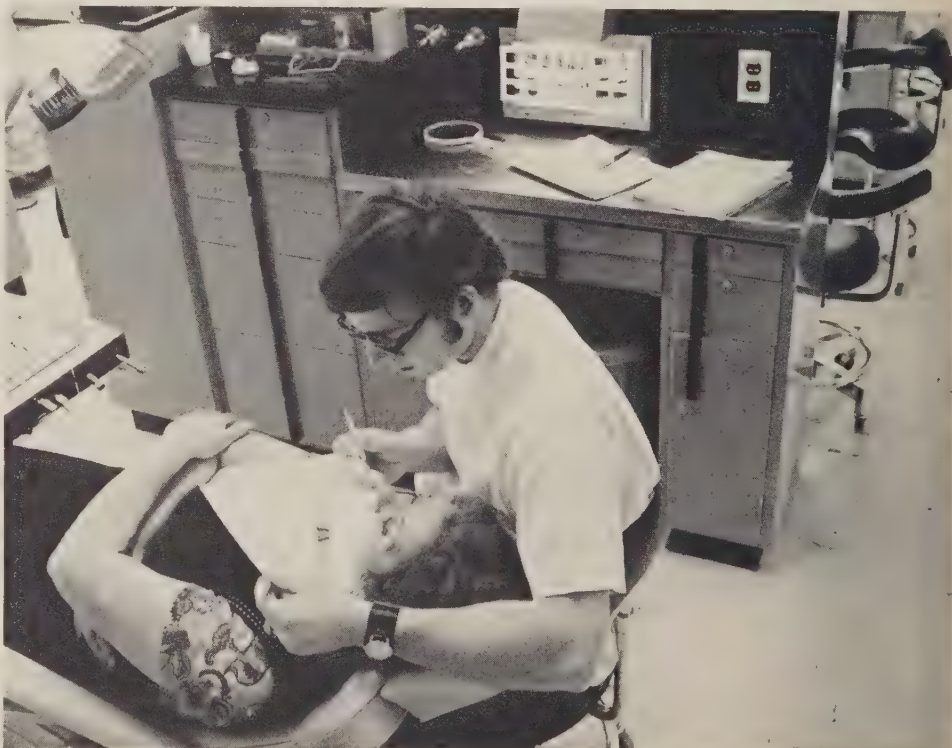
nombreuses affiches décorent les murs des couloirs et de la clinique.

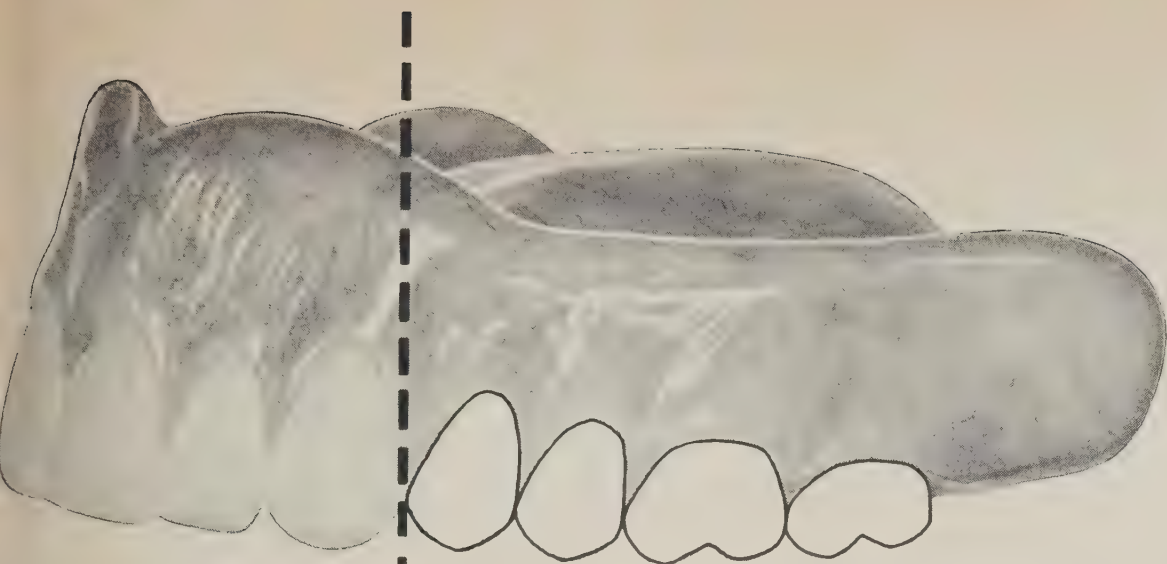
Les fauteuils dentaires ont cette particularité qu'ils peuvent s'ajuster suivant que le praticien est gaucher ou droitier.

Le service est également doté d'une section réservée à la démonstration clinique, d'une salle pour fondre la porcelaine et d'un bureau d'inscription agrandi et réorganisé. Le nombre des cellules réservées à la pratique clinique est passé de 48 à 61.

Il a été possible de faire ces changements grâce à une subvention du ministère de l'Education et de procéder aux

Etudiant travaillant dans la nouvelle clinique dentaire.





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réparations sans entraver les cours et les soins qui se donnaient au service dentaire. A la suite de ces transformations, l'on a fait don des fauteuils et appareils usagés à certains services et cliniques dentaires d'autres hôpitaux.

Le personnel

— Les étudiants sont répartis en unités indépendantes de quatre formées d'un étudiant de chaque classe;

— dans les cliniques d'enseignement, les étudiants des premières et de la dernière années du cours composent une équipe qui travaille dans la même cellule; tous les soins cliniques se font dans la cellule, sauf dans les cas de la chirurgie;

— les patients qui reçoivent des traitements font partie de la même cellule et sont suivis par la même équipe. Ce procédé crée de meilleurs rapports entre les étudiants et leurs patients, diminue le taux de roulement et assure de meilleurs traitements préventifs et une surveillance plus étroite de l'état des patients.

L'on vise à dispenser un enseignement qui tient compte de la pratique de l'avenir. L'on prévoit que l'exercice individuel fera place à la pratique en groupe. De plus les auxiliaires présentement disponibles et ceux qui sont en formation auront plus de responsabilités dans le domaine de la prévention et des soins courants. Il importe peu que la pratique en groupe fasse partie d'un programme public de santé ou qu'elle se fasse dans un cabinet privé. Si les notions fondamentales sont solides, l'une ou l'autre formule conviendra parfaitement à fournir les soins nécessaires. Toutefois, il faudra compter sur les services de tous les dentistes, qu'ils travaillent dans leur propre cabinet ou non, afin de satisfaire à la demande dans le domaine de la santé. Les pouvoirs publics et la profession dentaire auront tous deux un rôle important à jouer dans un tel programme. . . . Aussi les autorités de la Faculté dentaire de McGill tentent-elles de sensibiliser les étudiants à ces réalités.

Généreuse contribution des professionnels de la santé au FCED

Les dentistes et les hygiénistes ont souscrit plus de \$12,000 au cours du mois du FCED (octobre).

Dans le rapport mensuel publié au début du mois, monsieur M. E. Bower, président du FCED a déclaré: "Cette contribution généreuse est des plus encourageante. En 31 jours seulement, les dentistes ont versé \$11,591, une augmentation de 11 p.c. sur les souscriptions de l'an dernier, alors que les hygiénistes ont versé \$550, une augmentation de 54 p.c. Les sommes mentionnées comprennent les dons de \$100 ou plus."

Soulignant que le Fonds a reçu un nombre record de requêtes d'assistance, M. Bower insiste auprès des dentistes et des hygiénistes qui n'ont pas encore souscrit d'adresser leurs contributions sans délai au Fonds Canadien pour l'enseignement dentaire, 234 rue St-Georges, Toronto (180e) Ont.

Nomination à Laval

Lors de sa séance du 10 octobre 1972, le Conseil de l'Université Laval a nommé les membres du Bureau de direction de l'Ecole de médecine dentaire qui se compose des docteurs Paul Simard, directeur, Paul Jean, directeur-adjoint, Ralph Y. Barolet, secrétaire, Roland La Flèche, Normand Tardif ainsi que de messieurs Raymond Talbot, étudiant de 2e année, et Alain Landry, étudiant de 1ère année.

Les étudiants sont élus pour un an alors que les professeurs seront en poste jusqu'au 15 octobre 1974.

Un nouveau programme basé sur l'auto-évaluation des connaissances et de la compétence technique

L'American College of Dentists offre un nouveau programme d'enseignement comportant une série d'auto-examens destinés à fournir aux praticiens l'occasion d'évaluer leurs connaissances et leur compétence professionnelles et de les tenir au courant du progrès de tous les aspects de la dentisterie.

Bien que ce type d'examen ait été utilisé par plusieurs groupements de spécialités médicales et une spécialité dentaire (la chirurgie buccale), c'est la première fois qu'un tel programme est ouvert à toute la profession.

Le programme intitulé "Self-Assessment and Continuing Education in

Dentistry" sera inauguré au cours de l'année et l'on croit qu'il rendra les dentistes conscients de leurs propres progrès en éducation permanente. En même temps, le programme permettra à chaque participant de comparer ses connaissances à celles de ses pairs. En plus des résultats de ses examens, chaque dentiste sera informé du rang comparatif qu'il occupe parmi les autres dentistes qui ont subi les mêmes examens. Il recevra en outre les réponses correctes aux questions de l'examen ainsi qu'une bibliographie annotée qu'il pourra consulter ou utiliser pour ses études futures.

Les souscripteurs seront honorés par le FCED

D'après une récente déclaration de monsieur W. E. Bower, président du FCED, les membres individuels de l'équipe de santé dentaire qui souscriront \$100 ou plus au programme du Fonds canadien pour l'enseignement dentaire en 1972 seront cités comme "membres d'honneur" dans le rapport annuel courant publié par le Fonds.

Le rapport des activités du FCED est publié chaque année dans le Journal et des copies individuelles en sont adressées à plusieurs associations dentaires et firmes commerciales à travers le pays.

L'économie

Cent suicides par an chez les médecins aux Etats-Unis

Dans un communiqué émanant de Cincinnati, l'Agence de presse UPI rapporte qu'une centaine de médecins environ se suicident tous les ans aux Etats-Unis, selon un rapport de l'Association médicale américaine.

Le Conseil de la santé mentale, qui prépara le rapport, cite une enquête révélant que plus de médecins se donnent eux-mêmes la mort qu'il n'y en a qui périssent dans des accidents d'auto et d'avion, ou dans des noyades ou des meurtres.

Le rapport recommande la mise en oeuvre d'un programme qui aiderait les médecins à surmonter des problèmes

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personnels d'alcoolisme, de drogue et autres problèmes mentaux. Ce programme a été approuvé par le 26e congrès clinique des délégués de cette association.

En faisant appel aux médecins pour aider leurs collègues en détresse, le rapport cite une étude effectuée en 1964 par l'*American Journal of Psychiatry* qui affirmait que chez les médecins le taux d'accoutumance à la drogue excédait de 30 à 100 fois celui de la population en général.

Le rapport classe l'accoutumance à la drogue chez les médecins comme "un risque du métier".

Une autre étude, parue en 1969 dans le *New England Journal of Medicine*, indiquait que les médecins étaient plus portés à la consommation de la drogue et de l'alcool et plus susceptibles de rater leur mariage que les non-médecins.

Le conseil a recommandé que les médecins de l'hôpital où travaille un docteur souffrant de troubles mentaux s'occupent de lui si l'on ne peut pas le persuader discrètement de se faire soigner. Le conseil a ajouté que les médecins hésitent à se mêler des problèmes médicaux d'un collègue, qualifiant leur attitude de "conspiration du silence".

"Les médecins n'aiment pas reconnaître le fait que l'un d'eux peut tomber malade," souligne le rapport.

Parmi les résolutions adoptées par les médecins à ce congrès, on en note une relative à la fluoruration des eaux qu'ils considèrent prioritaire dans leur programme d'éducation.

Une plus grande socialisation de la médecine

Le Conseil central des Syndicats nationaux (CSN) de Montréal tenait un congrès spécial de trois jours, fin-novembre, dans le but de sensibiliser les travailleurs des services de la santé et des services sociaux à la nécessité de se tailler une place importante sur les divers conseils d'administration prévus par la loi 65.

Voici quelques-unes des principales résolutions adoptées au terme de ces assises:

- instauration d'un régime de salariat pour les médecins;

- conversion des établissements privés de santé et de bien-être en corporations sans but lucratif;

- action prioritairement préventive des centres locaux de services communautaires;

- création dans chaque établissement de santé et de bien-être d'un comité local d'action sanitaire et sociale formé des travailleurs de l'endroit.

Le président de la CSN, M. Marcel Pépin, a signalé que la loi 65 fournit une excellente occasion de remettre en cause certaines questions, comme la rémunération à l'acte des médecins. "S'il existe un autre mode de rémunération meilleur que le salariat pour les médecins, a-t-il affirmé, qu'on le fasse savoir".

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 novembre 1972:

Fonds à revenu fixe \$13.626;

Fonds d'actions ordinaires \$30.882.

L'avoir total (valeur marchande) du régime se montait à \$14,380,620.58.

Au cours du mois précédent, nous n'avons pas fait d'achats ni de ventes.

Le paragraphe 146(5) de la loi régissant l'impôt sur le revenu autorise des contributions non imposables à un programme de retraite personnelle, représentant jusqu'à 20 p.c. du revenu, avec un maximum de \$4,000.

La Compagnie Trust Royal, qui gère le Régime d'épargne-retraite de l'ADC offre deux sortes de placements distincts: un fonds à revenu fixe et un fonds d'actions ordinaires. Les contributions peuvent être faites entièrement ou en partie au(x) fonds que choisit le contributeur. Il peut faire des transferts entre les fonds sans payer d'amendes.

Le fonds à revenu fixe, qui se compose de bons du trésor, d'obligations, d'actions privilégiées et d'autres sécurités à revenu fixe, offre un très bon revenu avec un risque très faible. Le fonds d'actions ordinaires, qui se compose d'actions ordinaires canadiennes, américaines et étrangères soigneusement choisies, a comme objectif principal l'augmentation du capital.

L'adhésion au programme ou le retrait n'entraîne aucun paiement supplémentaire, ni commission.

Pour de plus amples renseignements, veuillez écrire à: CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

La fluoruration

Sondage sur la fluoruration de l'eau dans la région de Montréal

Un sondage effectué, au cours de l'été par une équipe de 30 étudiants, auprès de 10,000 citoyens du grand Montréal, révèle que 52 p.c. d'entre eux sont favorables à la fluoruration de l'eau de consommation. D'autre part, l'analyse des réponses permet de constater que 21 p.c. des personnes interrogées sont contre, 23 p.c. sont indécises, et 4 p.c. n'ont aucune opinion. Ce sondage a été la réalisation d'un projet organisé dans le cadre du programme Perspective-Jeunesse par quatre étudiants de Montréal.

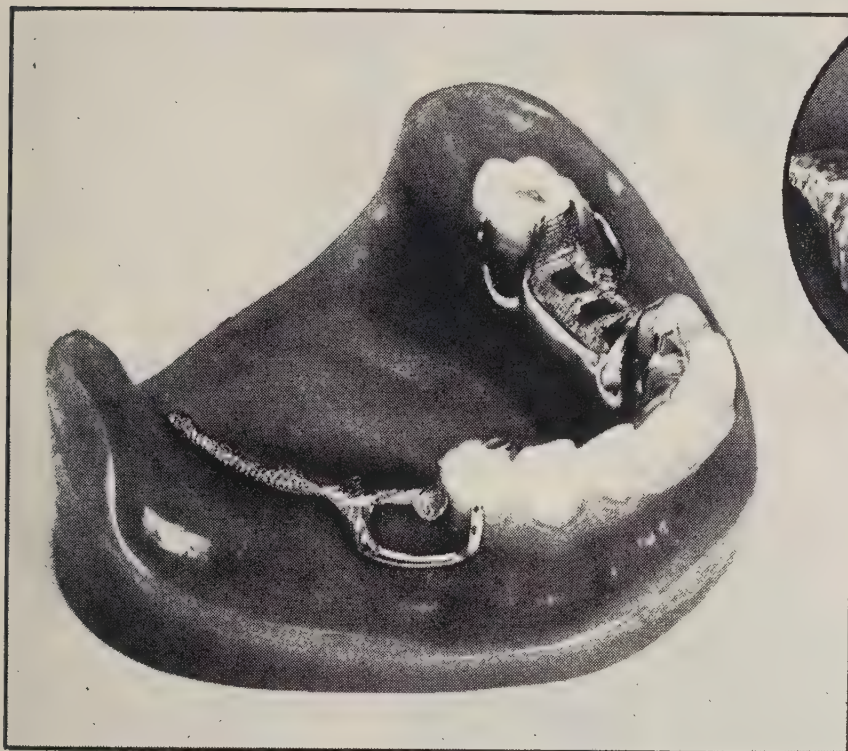
Le but de ce projet intitulé "Fluoruration ou non?" était de tâter le pouls de la population sur cette mesure de santé publique que l'on dit si controversée.

Assistés par 26 autres étudiants, les quatre organisateurs du sondage ont rejoint, en l'espace de trois semaines, 10,000 personnes réparties dans 18 districts postaux de la région métropolitaine, soit Centreville, Parc Lafontaine, Delorimier, Pointe-aux-Trembles, Côte-Saint-Paul, Ville-Emard, Saint-Henri, Hampstead, Côte-des-Neiges, Notre-Dame-de-Grâce, Jarry, Youville, Ahuntsic, Montréal-Est, Rosemont et Bourassa.

Motifs de l'opposition

Parmi les gens qui s'opposent à la fluoruration, 23 p.c. disent qu'ils ne sont pas assez renseignés sur le sujet; 37 p.c. croient que la fluoruration serait un danger pour la santé; 5.3 p.c. sont convaincus que cette mesure préventive constituerait un danger pour les gens âgés; 9.3 p.c. disent que ce serait porter atteinte à la liberté; 8.5 p.c. refusent la fluoruration parce qu'elle n'est bénéfique qu'aux enfants de moins de 13 ans; 3 p.c. affirment qu'elle serait trop coûteuse, et 13 p.c. ne sont pas en faveur pour des raisons d'ordre divers.

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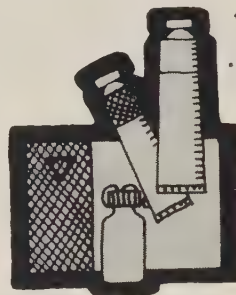
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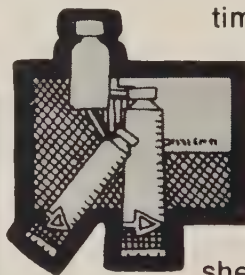
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An unusual cuspid impaction: Report of case

M. H. Wechsler, DDS, FRCD(C)
Montreal

This report describes a case of a Class I bimaxillary protrusion complicated by an impacted lower cuspid. The four first bicuspid were extracted and the lower cuspid brought into position without any loss of vitality.

Le rapport suivant donne le compte-rendu d'un cas de protusion bimaxillaire, Classe I, compliqué par la présence d'une canine inférieure incluse. Les quatre premières prémolaires furent extraites et la canine inférieure replacée en position normale sans aucune perte de vitalité.

Tooth impaction is a relatively common occurrence and presents the dentist with a dilemma between extraction of the tooth or bringing it into position.

The teeth most frequently embedded are the lower third molars, followed by the maxillary cuspids and the lower second bicuspid.¹ Most of the cuspid impactions described in the literature are in the maxillary arch.²⁻¹⁴ Considerably fewer mandibular impactions have been reported; Johnston⁸ mentions that in 31 years of practice he has treated only six.

The aetiology of impaction has not been definitely established. Hovell¹⁵ has ascribed two main causes, namely maldirection of eruption and complete misplacement of the tooth germ. The former seems the commonest cause of non-eruption of teeth, the most frequently affected being the

maxillary cuspids. Most factors influence the rate of eruption, and these obviously play a role in causing teeth to be deflected in their eruptive paths. Cranin⁵ lists 13 local factors which may delay the eruption, including the premature loss of a primary tooth and inadequate jawbone to accommodate all the teeth. A similar attempt to classify the aetiological factors was made by Berkman.⁴

The location of unerupted teeth should be thoroughly documented through the use of radiographs — periapical, occlusal, lateral jaw, frontal and panoramic. Of the various radiological procedures, Ewan's⁶ "shift technique," which is based on periapical radiographs taken at different angles, is highly effective. Another excellent method is the use of a true vertex occlusal radiograph which is taken along the long axis of the teeth,¹⁶ permitting a more precise three-dimensional location.

It is understandable that the management of cases of impaction depends on the location and varies according to one's approach to treatment. In the past, malpositioned teeth were extracted since it was thought that they would damage or interfere with the roots of adjacent teeth. More recently, oral surgeons have attempted repositioning as a means of "immediate orthodontics." Johnston⁸ favours a conservative approach involving the exposure of the tooth, allowing it to erupt for four to six months, and then bringing it into position orthodontically with the aid of an onlay cemented on the tooth. Others advocate the use of pins cemented into holes drilled into the tooth.¹¹ These procedures are not new. In 1897, Angle's textbook,¹⁷ *The Regulation and Retention of Teeth*, illustrated several methods of elevating embedded teeth, including the use of pins and elastics to relocate them. More sophisticated modifications of these basic approaches have been described in recent publications.^{9,13,18}



Fig 1 Pre-treatment extra-oral photographs.

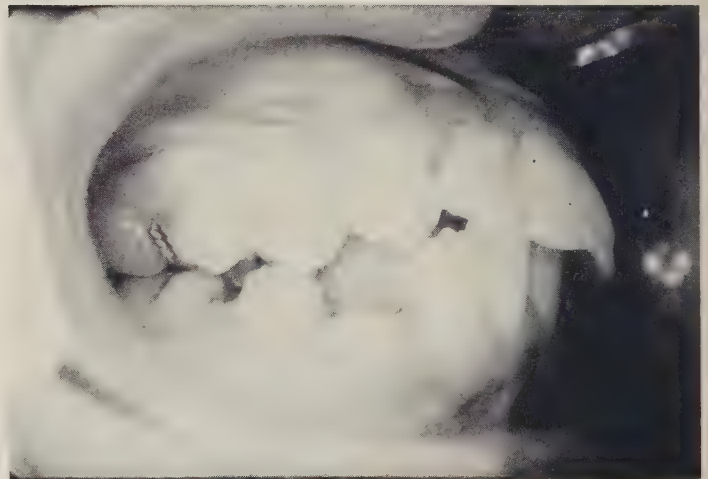


Fig 2 Pre-treatment intra-oral photographs.

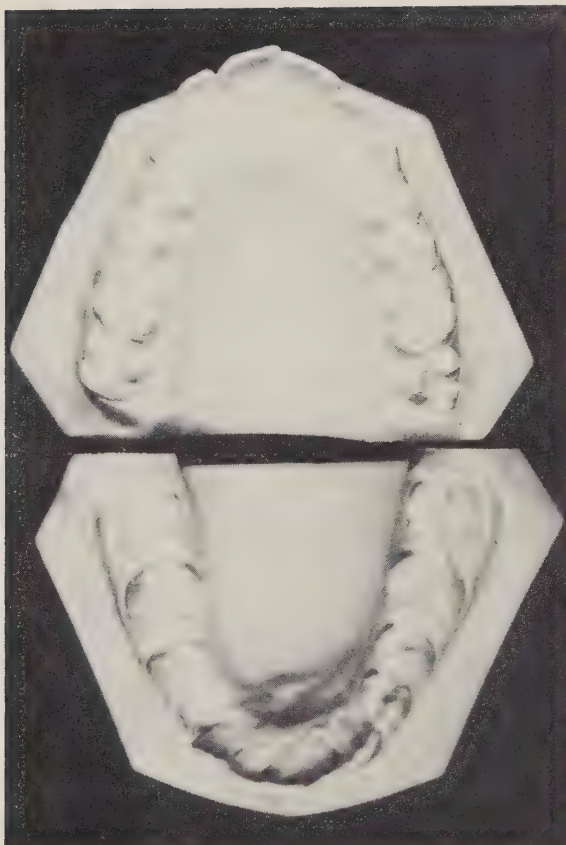


Fig 3 Occlusal view of casts before treatment.

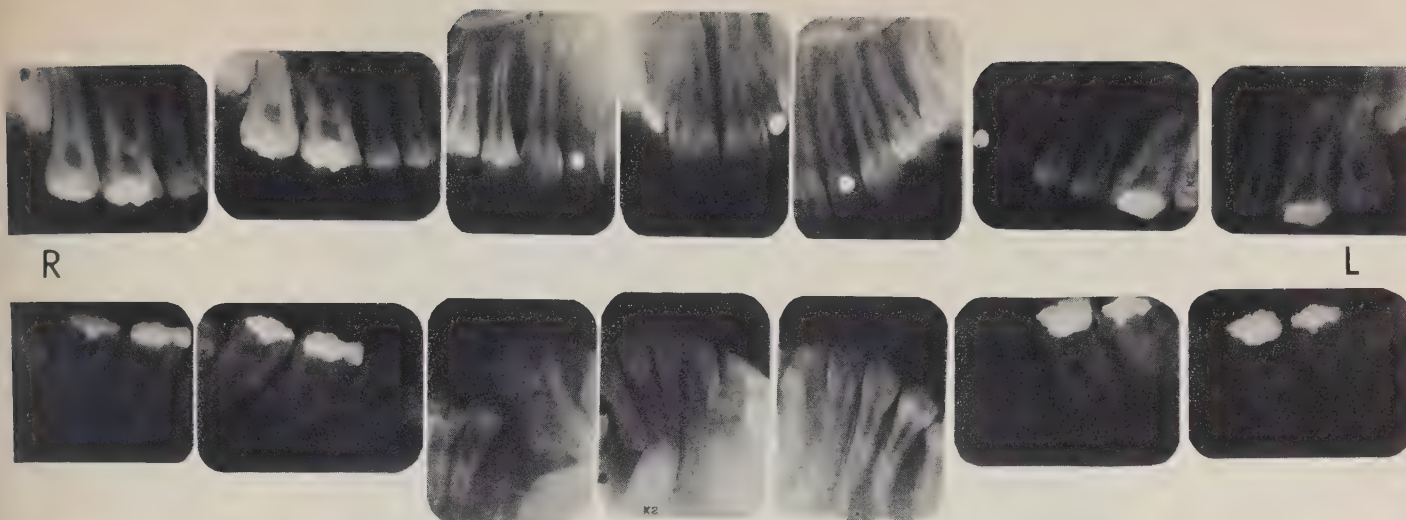


Fig 4 Pre-treatment periapical radiographs showing the position of the impacted lower right cuspid.

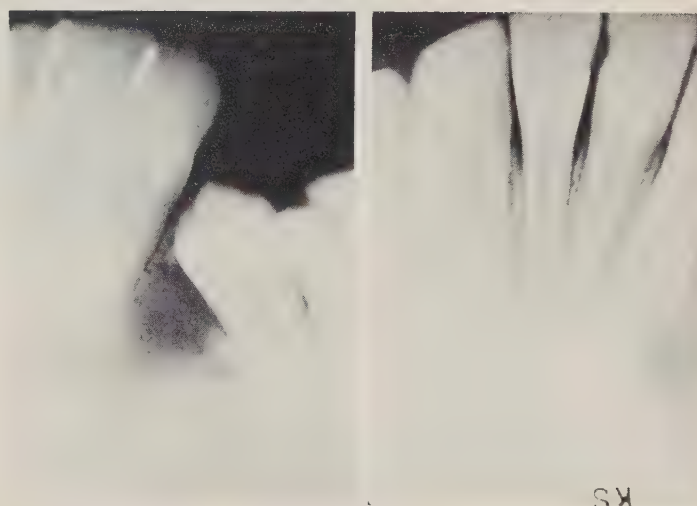
The purpose of this report is to illustrate how far a tooth can be moved with little damage to its root. It describes a case in which an unusually located mandibular cuspid was brought into position over a relatively long distance without injury to its root or to the surrounding structures and without impairment of its vitality.

Case report

A 12 year old Caucasian girl was referred for orthodontic consultation regarding a lower impacted cuspid. Clinical examination revealed that the tongue was normal in size but there was a lateral tongue thrust habit. The dental and medical histories were non-contributory. There was some gingivitis around the upper right cuspid.

Clinical and radiographic data — The extra-oral photographs (Fig 1) show fullness of the lips and difficulty in maintaining lip seal, and the profile view indicates that there is a bimaxillary protrusion.

Examination of the intra-oral photographs with the teeth in occlusion (Fig 2) reveals that the molars as well as the left cuspids are in neutroclusion. However, the maxillary right cuspid is distal to the mandibular lateral incisor but mesial to the just erupting lower right first bicuspid. There is an overjet of about 5.5 mm and an overbite of about 3 mm. The lower midline has shifted to the right by almost one tooth width. The maxillary cast (Fig 3) shows some crowding and rotation of the anterior teeth. The maxillary right first bicuspid is mesiolingually rotated. The mandibular cast shows the buccal cusp of the right first bicuspid just erupting with no room for the lower right



cuspid. The lower anterior teeth appear labially inclined off basal bone, and there is a moderate curve of Spee. The second molars have erupted.

The intra-oral radiographs (Fig 4) indicate that the lower right cuspid is present at the midline, with the tip of its cusp lying somewhere in the vicinity of the lower central incisors. There is a radiolucent area leading from the lower right bicuspid to the crown of the cuspid. The roots of the lower right first and second bicuspids appear in close apposition, and the former tooth is severely tipped mesially. The four third molars are present. There are large restorations on the lower and upper left first molars.

Cephalometric analysis — The cephalogram, tracing and pertinent measurements may be seen in Figures 5, 6 and 7. The skeletal analysis (Fig 5, 6) shows that this is a convex face with an apparently re-truded chin. The denture analysis (Fig 6) indicates that the lower as well as the upper incisors are excessively labially inclined. The lower incisors especially are very procumbent relative to the A-Po



June 1965 12Y-1M

SKELETAL	
PATTERN	June 1965
SNA	81.5
SNB	75.5
ANB	6
SN-GoGn	32
FA	84.5
CA	12
AB PI, to Fac. PI	7
M PI	24.5
Yaxis to FH	60°
Gonial Angle	119°

DENTURE	
LT	102.5
Imm APo.	11mm
Imm NA	7.5mm
Imm NA	32°
T, M PI	112°
T (APo.)	34°
T mm APo	6mm
T (NB)	40.5
T mm NB	9mm
Po. NB	9:1
UL - EP	
LL - EP	
OCC - SN	19.5°

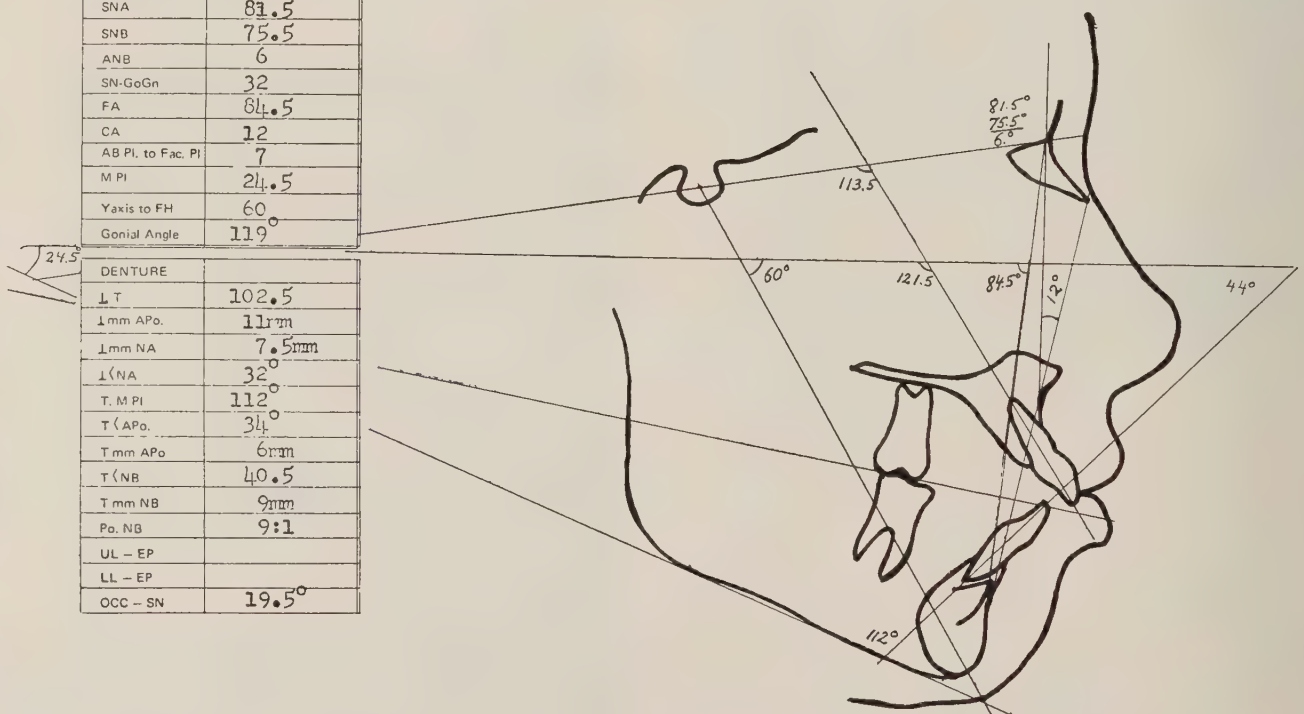


Fig 5 Pre-treatment cephalogram and tracing.

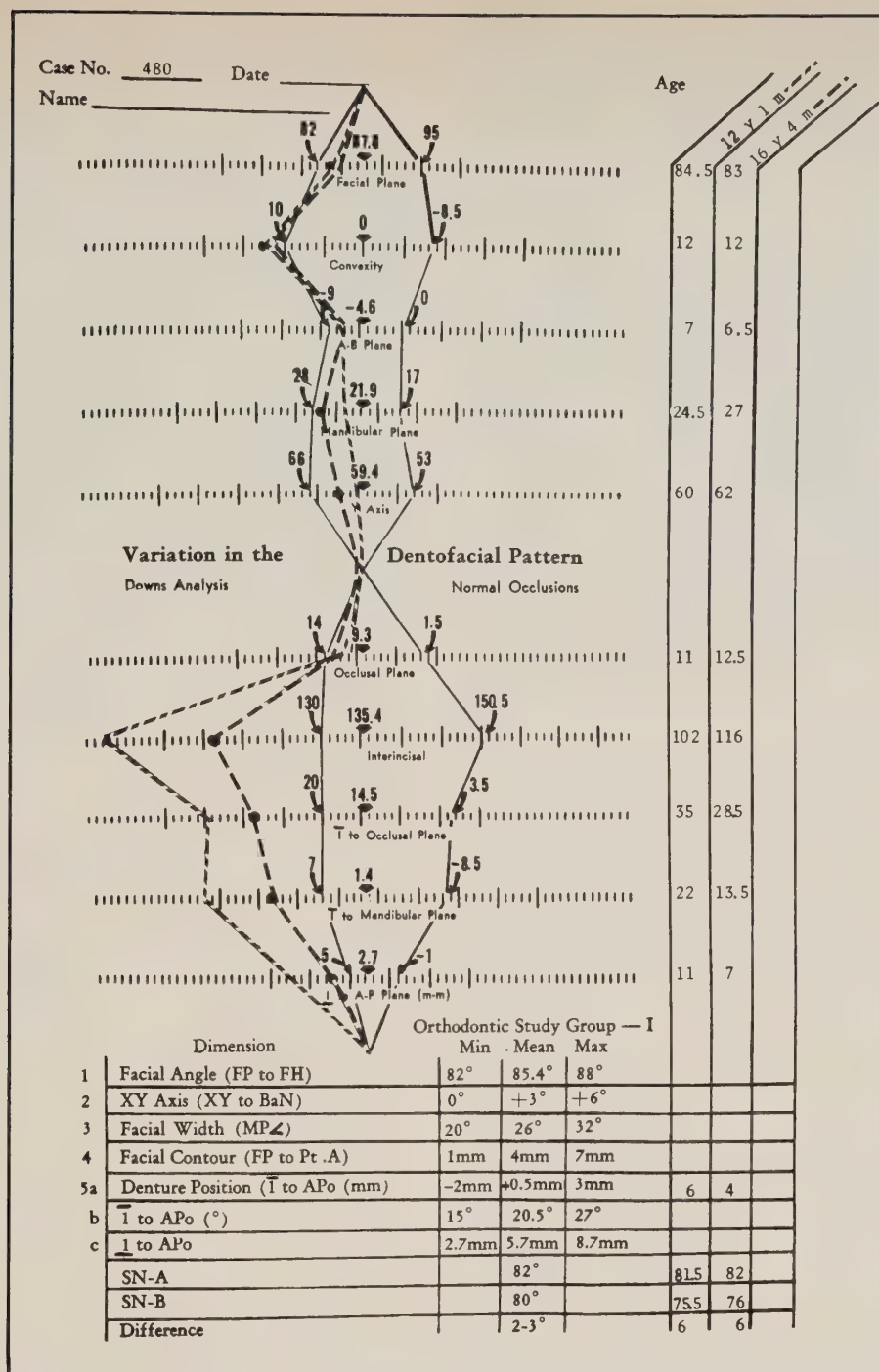


Fig 6 Down's analysis on a Vorhies-Adams polygon showing pre- and post-treatment measurements.

line (6 mm). These factors further corroborate the diagnosis of bimaxillary protrusion.

Aetiology – The aetiology of the impaction is unknown. The mother does not know of any familial history of impaction.

Treatment

The objectives of treatment were to: (1) try to bring the lower impacted cuspid into alignment; (2) retract the lower and upper anterior teeth and

reduce the dental protrusion; (3) correct the mid-line discrepancy; and (4) improve facial aesthetics.

Rationale for treatment – According to the Tweed analysis, there was a cephalometric discrepancy of 17 mm and model deficiency of 8 mm making a total of 25 mm, which indicated the necessity of extraction of teeth. The Howes analysis (Fig 8) points toward a severe lack of basal arch width relative to tooth material. In view of these findings and in order to achieve the stated objectives it was decided to extract the four first bicuspids.

CEPHALOMETRIC TRACING ANALYSIS

PATIENT'S NAME _____ No. 480 Age 12Y Sex F

TWEED ANALYSIS

	June 65	Aug 69				
FMA	24	27				
IMPA	112	103.5				
FMIA	44	49.5				

STEINER ANALYSIS

Ref. Norm.

SNA	(angle)	82°	81.5	82		
SNB	(angle)	80°	75.5	76		
ANB	(angle)	2°	6	6		
SND	(angle)	76° or 77°	71.5	73.5		
I to NA	(mm)	4	7.5	3		
I to NA	(angle)	22°	32	23.5		
I to NB	(mm)	4	9	7.5		
I to NB	(angle)	25°	40.5	34		
Po to NB	(mm)	not established	0	0		
Po & I to NB	(Difference)		9	7.5		
I to I	(angle)	131°	102.5	116		
OccI to SN	(angle)	14°	19.5	20		
GoGn to SN	(angle)	32°	32	35		
Arch length discrepancy						

Fig 7 Tweed and Steiner analyses before and after treatment.

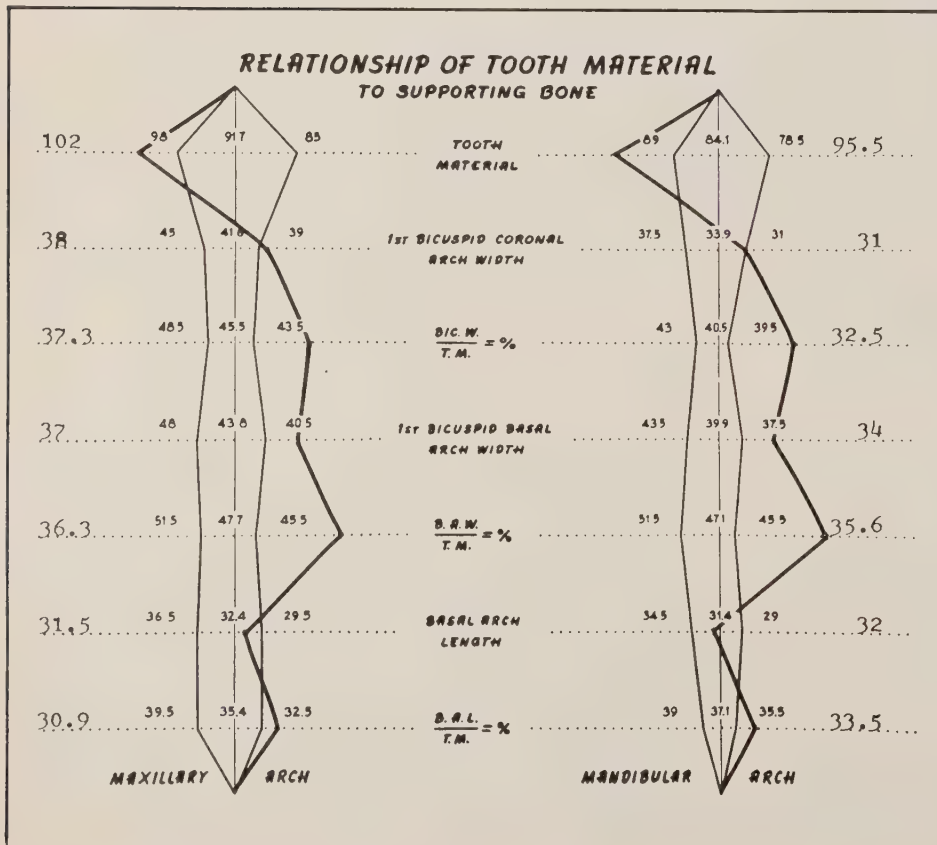


Fig 8 Howes analysis showing the relationship of tooth material to supporting bone.

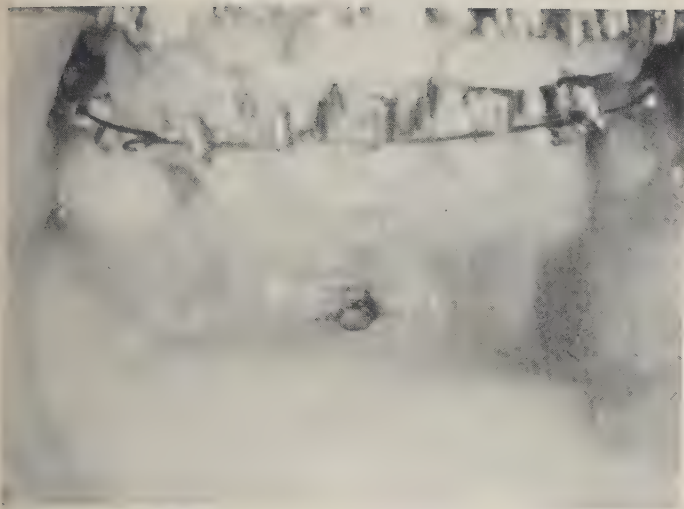


Fig 9 After surgical exposure of the cuspid, the cusp tip could not be seen but could be probed with an explorer.



Fig 10 Radiograph of pin with eyelet cemented into hole drilled into the tooth.

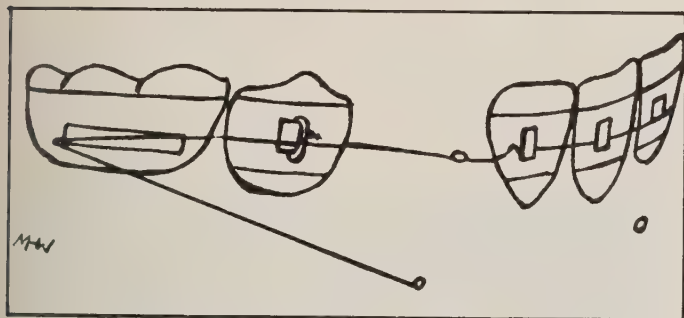


Fig 11 Distal extension of archwire recurved forward with a hook bent so that it could be tied to eyelet on the tooth. (Modified from Begg.³)

Appliances used — The Begg light wire method was chosen for treatment. All teeth were banded with light wire brackets except the first molars, which bore .036 buccal tubes. The lower right impacted cuspid was exposed on the labial between the two central incisors (Fig 9). A hole was drilled into the cuspid and a pin with an eyelet was cemented into this hole (Fig 10); .016 wires were placed on both upper and lower arches. The lower wire had a distal extension recurved so as to permit the tying of an elastic from the pin to it (Fig 11). The spring exerted its force in a distal and lateral direction and since the pin was tied to it with light elastic ligature the pull was more posterior than lateral. A stop was placed mesial to the lower right first molar. After successive ligations, the crown of the cuspid was visible labial to the lateral incisor (Fig 12). Since the space between the lower right second bicuspid and lateral incisor was beginning

to close, despite the stop mesial to the molar, a posterior open coil was placed between the lateral incisor and first bicuspid in order to open space for the cuspid (Fig 13). Because the cuspid came in rotated, it was necessary to place a rotating spring on it (Fig 14). A .012 wire with two T loops was placed in order to elevate the cuspid (Fig 15). When this was accomplished, the lower wire was replaced with a straight .014 wire, and intra-maxillary elastics were started in the other three quadrants to close the extraction spaces.

After all spaces were closed and the molar relations as well as the overbite and overjet were corrected, Begg Stage III mechanics were instituted — that is, uprighting springs were placed on cuspids and bicuspids (Fig 16). All the upper bands were removed first because uprighting had not been completed on the lower teeth. Later, the lower bands were removed and an immediate tooth positioner was given. Treatment time was 35 months.

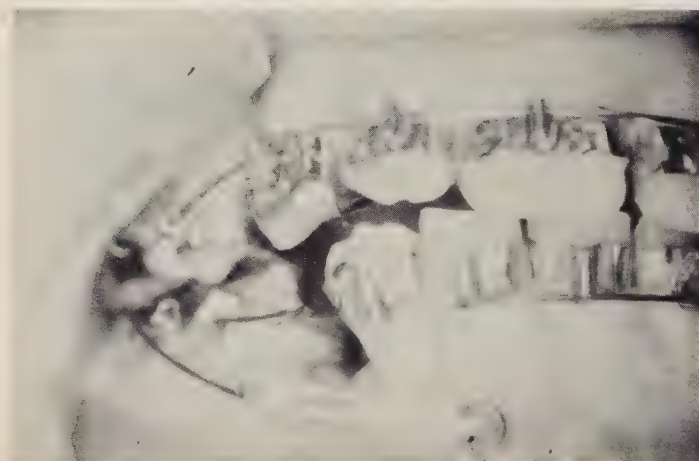
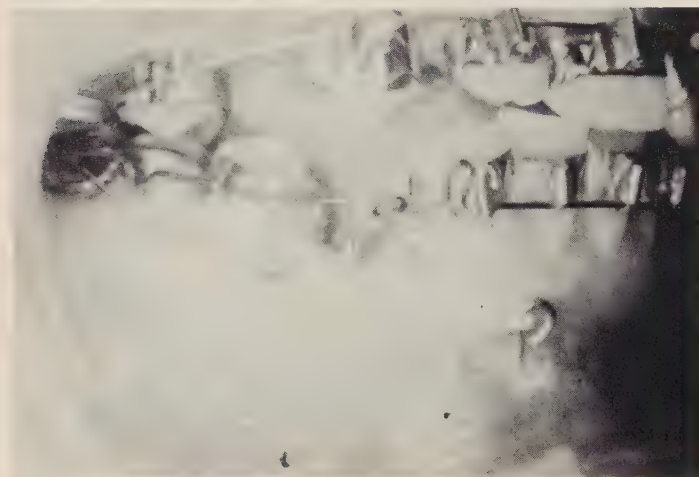
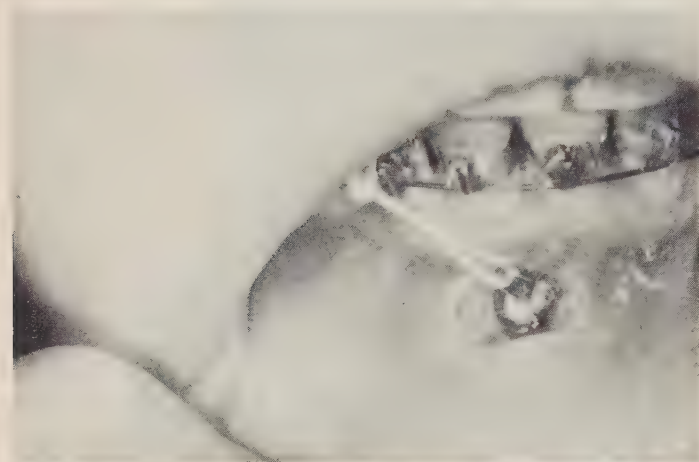
Results

The main objectives of treatment have been reached, as can be seen from the photographs. The lower right cuspid has been brought into alignment. The dental protrusion has been reduced somewhat by retraction of the upper and lower anteriors. The midline deviation has been corrected. Posterior interdigitation is good.

The facial photographs (Fig 17) show that aesthetics have been improved. The bimaxillary appearance of the face has changed to one with a straighter profile and the lips seem to meet more normally. The intra-oral photographs (Fig 18) show

that the midline has been corrected and that the posterior teeth are in good occlusion. However, the gingiva of the lower right cuspid has receded (gingival stripping) and some of the cementum has been exposed. One can also see a buccal Class V cavity on the lower right second bicuspid which the patient has neglected to have filled. Some decalcification can also be seen on the upper left lateral incisor due to poor oral hygiene.

The intra-oral radiographs (Fig 19) show that the roots of the cuspids and bicuspids have become parallel. The lower right cuspid appears to have a bulbous root apex.

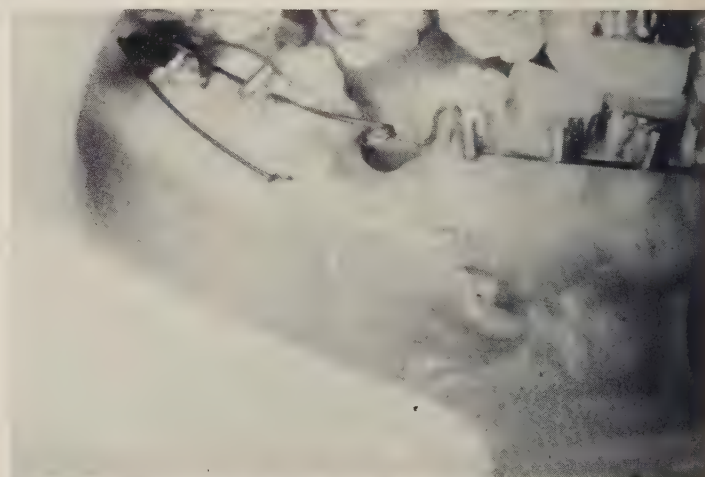


The post-treatment cephalogram and tracing (Fig 20) and the composite tracings (Fig 21, 22) show changes which have occurred as a result of growth and treatment. Figure 21 is a composite of pre- and post-treatment tracings superimposed at S and along SN. Figure 22 depicts changes which have taken place in the maxillary and mandibular teeth. In the maxilla, this was obtained by superimposition at ANS and along the palatal plane, while in the lower jaw tracings were superimposed at D and along the mandibular plane.

Conclusion

Measurements taken on the casts show that the crown has moved about 23-24 mm from its original position. There were other possibilities in treating this case, such as extracting only three first bicuspids and utilizing the lower right first bicuspid as a cuspid, or extracting second bicuspids. However, I believe in this particular instance the tech-

Fig 12 Progressive movement of cuspid after successive ligations with elastic ligature over an eight month period.



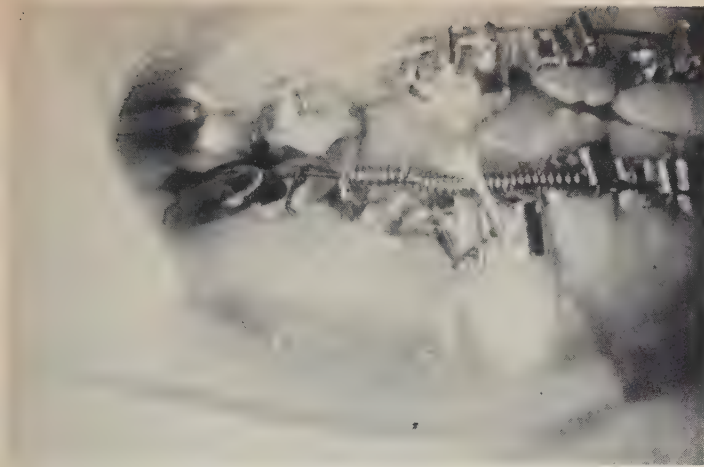


Fig 13 Coil spring placed to open space for cuspid and an uprighting spring placed to bring root into position.



Fig 14 Helical spring placed to rotate cuspid mesiolingually.

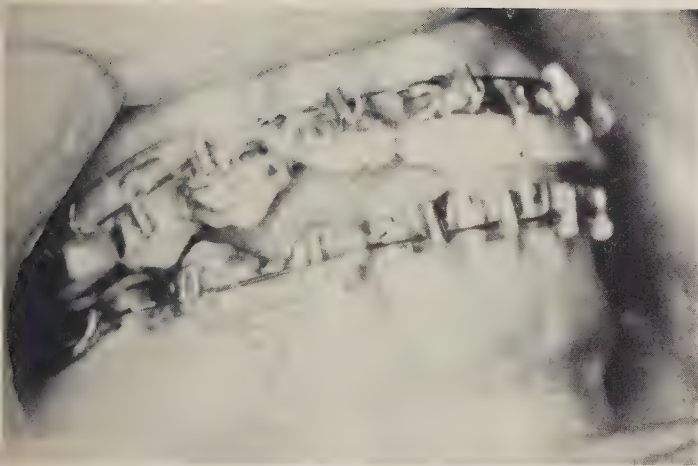


Fig 15 .012 wire with T-loops to elevate cuspid.

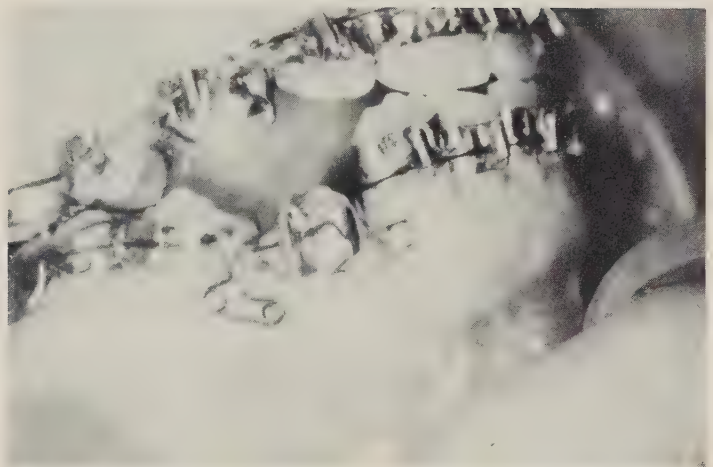


Fig 16 Uprighting springs placed on cuspids and bicuspids for stage III of Begg treatment.

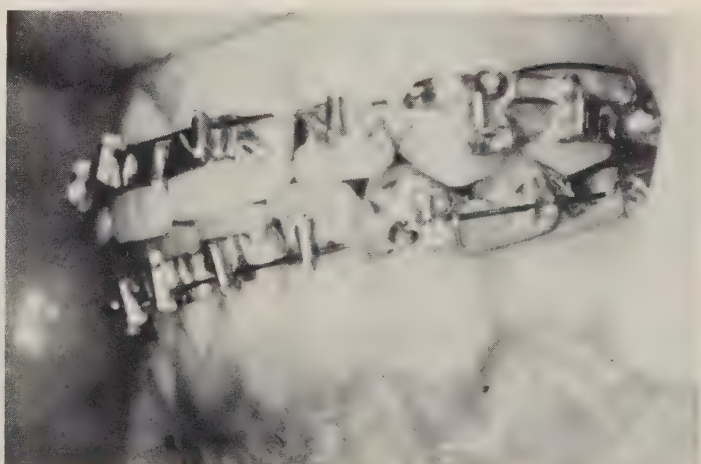




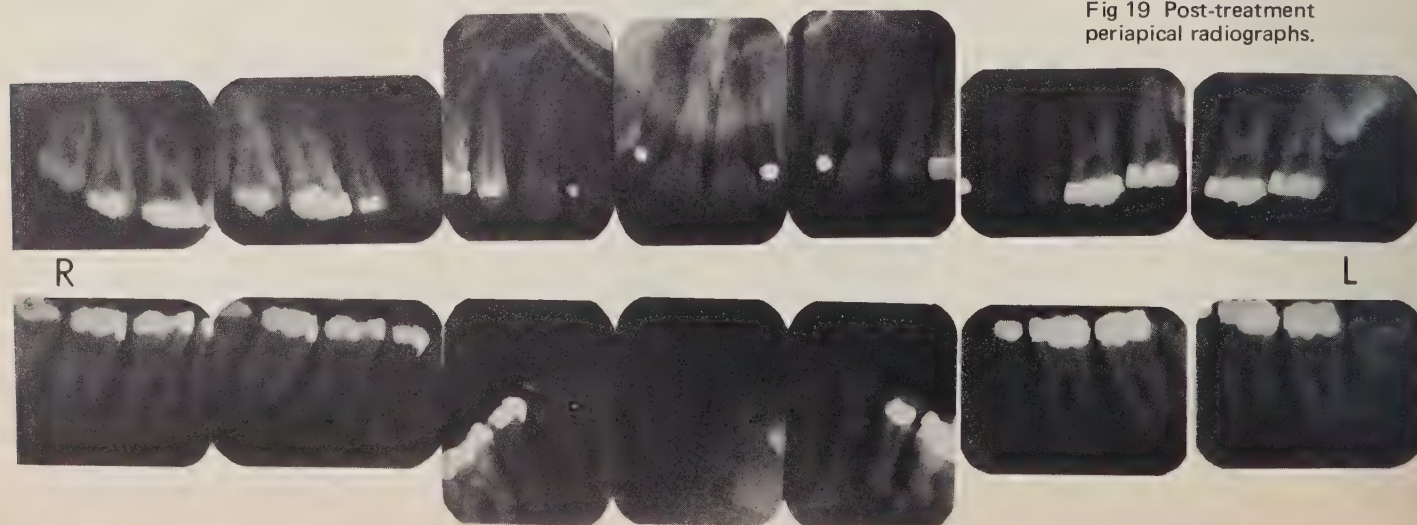
Fig 17 Post-treatment extra-oral photographs.



Fig 18 Intra-oral photographs after treatment.



Fig 19 Post-treatment periapical radiographs.



nique used provided satisfactory results and the objectives of treatment were achieved.

Summary

A Class I bimaxillary protrusion complicated by an impacted lower cuspid close to the midline has been described. Four first bicuspsids were extracted and the lower cuspid was brought into position with no loss of vitality.

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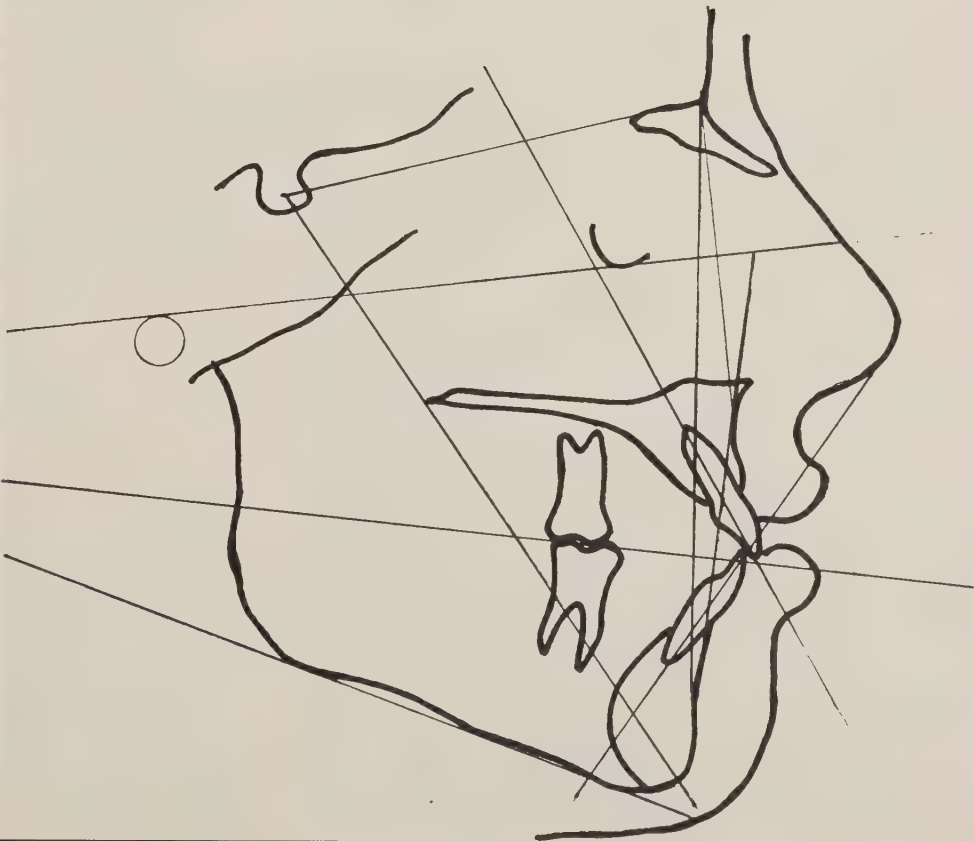
- 1 Saltzmann, J. A. Principles of orthodontics. Ed 2. Philadelphia, Lippincott, 1950.
- 2 Barron, J. M. Oral surgery in preventive orthodontics. Dent Clin N Amer p 461, July 1964.
- 3 Begg, P. R. Begg orthodontic theory and technique. Philadelphia, Saunders, 1965.
- 4 Berkman, M. D. Pedodontic radiographic interpretation. Dent Radiog Photog 44:30, 1971.
- 5 Cranin, A. N. and Cranin, S. L. Aiding eruption of maxillary cuspids. Dent Radiog Photog 41:27, 1968.
- 6 Ewan, G. E. Locating impacted cuspids using the shift technique. Amer J Orthodont 41:926, 1955.
- 7 Grenadier, I., Philip, C. and Stein, S. H. Bonding attachments directly to teeth. J Pract Orthodont 3:399, 1969.
- 8 Johnston, W. D. Treatment of palatally impacted canine teeth. Amer J Orthodont 56:589, 1969.



Fig 20 Post-treatment cephalogram and tracing.

SKELETAL	
PATTERN	Aug. 1969
SNA	82
SNB	76
ANB	6
SN-GoGn	35
FA	83
CA	12
AB PI. to Fac. PI.	6.5
M PI	27
Yaxis to FH	62.5
Gonial Angle	116

DENTURE	
∠ T	116
∠ mm APo.	7mm
∠ mm NA	3mm
∠ (NA	23.5°
T. M PI	103.5°
T (APo.	28.5°
T mm APo	4mm
T (NB	34°
T mm NB	7.5mm
Po. NB	7.5:1
UL - EP	
LL - EP	
OCC - SN	20°



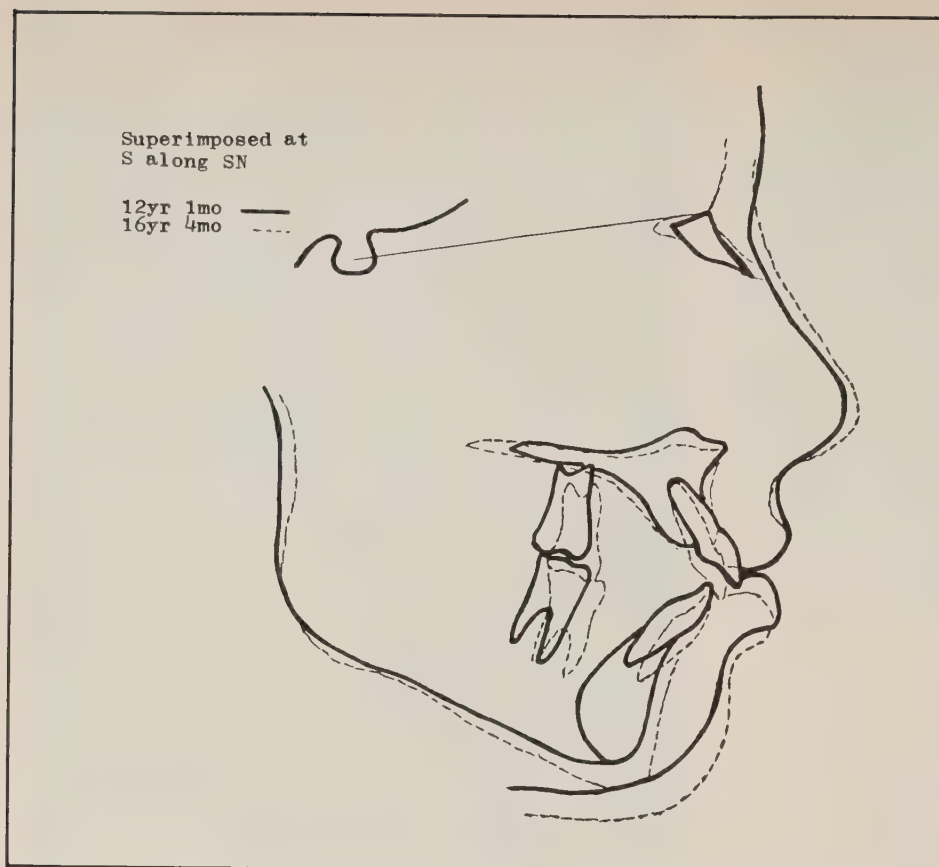


Fig 21 Composite of cephalometric tracings before (unbroken line) and after (broken line) treatment. The tracings are superimposed at S and along SN.

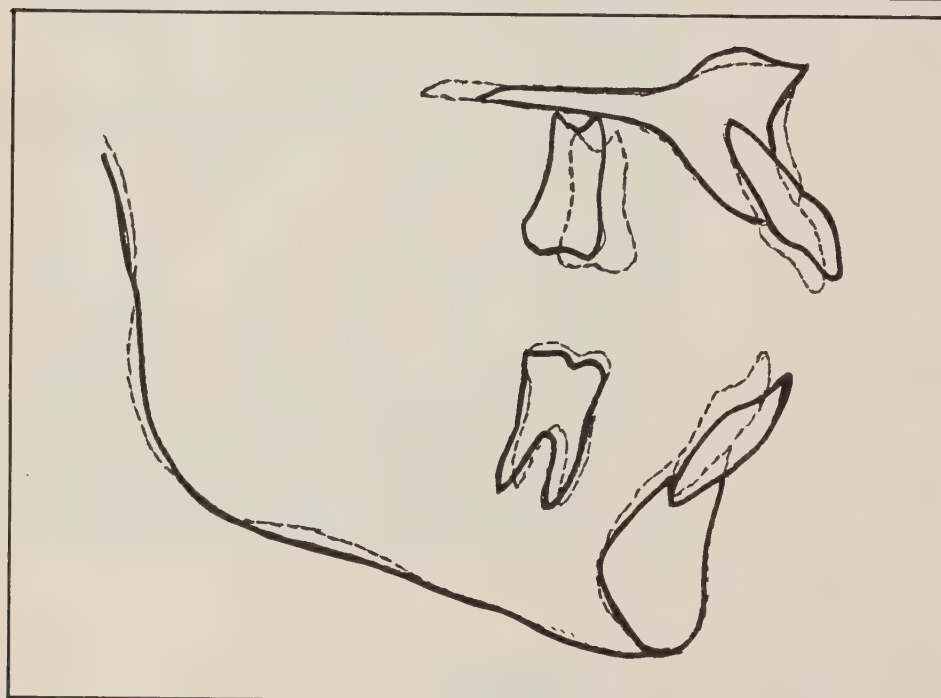


Fig 22 Composite of cephalometric tracings before (unbroken line) and after (broken line) treatment depict changes in the maxillary and mandibular teeth.

- 9 Kean, M. R., and Linn, G. M. Acrylic veneer: an orthodontic attachment for partially erupted teeth. *N Zeal Dent J* 64:168, 1968.
- 10 Laskin, D. M. and Peskin, S. Surgical aids in orthodontics. *Dent Clin N Amer* p 509, July 1968.
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- 14 Peterson, L. W. and Wilson, A. E. Surgical adjuncts to orthodontic treatment. *Dent Clin N Amer* p 371, July 1964.
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- 17 Angle, E. H. The Angle system of regulation and retention of the teeth. Ed 5. Philadelphia, S. S. White, 1897.
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Dentists' attitudes to prepaid children's dental care programs and expanded duty dental auxiliaries in Saskatchewan

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J. R. Mann

C. W. B. McPhail, DDS, MSD, MScD

Saskatoon

In 1970 a questionnaire was compiled by students at the College of Dentistry, University of Saskatchewan, and sent to all dentists practising and licensed in Saskatchewan to assess their attitudes to a prepaid dental care program for children in that province. A second questionnaire was compiled in 1972 to assess their opinions on a proposed government sponsored dental nursing program.

En 1970, les étudiants du Collège de dentisterie de l'Université du Saskatchewan ont compilé les réponses à un questionnaire adressé à tous les chirurgiens dentistes autorisés, en exercice dans cette province, afin d'évaluer leur attitude à l'égard d'un programme de soins dentaires prépayés pour les enfants de cette province. Un second questionnaire suivit en 1972 afin d'évaluer les opinions concernant le projet du gouvernement d'implanter un programme dentaire confié aux infirmières.

The dental profession in Canada is faced with its greatest challenge to date: to provide the leadership that will make possible the highest attainable standard of dental health to all Canadians (a concept tacitly recommended in 1964 by the Royal Commission on Health Services¹) through programs that are marketable and at costs that will be competitive in the market place of the day. This challenge comes from governments and an expanding

segment of our society which is increasingly affluent and knowledgeable and tends to look upon health as a basic right. The nature of and reasons for these developments have been discussed fully elsewhere.¹⁻⁴

This situation is not unique to Canada. Over the years the challenge has been approached in various parts of the world in a variety of ways — such as the traditional North American independent practice fee for service;^{1,4,5} increased dental manpower;⁶ increased use and expanded duties of auxiliaries;^{7,8} profession formulated dental health plans for children;⁹ government operated child dental health care programs;¹⁰ wider use of water fluoridation;¹¹ and legislation calling for a state-wide use of topical dental caries-inhibiting agents for all school children.¹²

These measures have met with varying degrees of success, and various approaches have been more or less successful in different regions of the world. The key to a successful approach in Canada would appear to be in finding the appropriate combination of measures best suited to the changing but peculiar needs and situations of a particular region. This approach requires careful and proper assessment, innovation and courage.¹³⁻¹⁵

Recent approaches in Saskatchewan include the establishment of a dental school; a one year training program for certified dental assistants, which includes intra-oral procedures previously limited to dentists and dental hygienists; a three year research project (Oxbow¹⁶) instituted in 1970 to test the feasibility and practicability of providing comprehensive child dental care to rural areas by means of a dental team comprised of a dentist, receptionist, three certified dental assistants (with expanded duties), and two British nurse type dental

auxiliaries. In the spring of 1972 the Saskatchewan government announced the beginning of a two year dental nurse training program. It will be offered at the Saskatchewan Institute of Applied Arts and Sciences, Regina, in the fall of 1972.¹⁷ A provincial comprehensive dental care program for children under 13 is to follow. Such a concept of dental health care is not new to Saskatchewan — a government in-depth study of this type of approach was undertaken in 1962¹⁷ — about the same time that the Saskatchewan Medical Care Insurance Act (medicare) was legislated. (Although medicare has likely focussed greater attention on all aspects of health, it has not contributed significantly to change in the dental disease level. This appears to be a specific health problem, largely amenable to action involving the dental profession and its auxiliaries.)

Because of these factors, happenings and trends, and because the success of any approach to dental health programs will ultimately depend largely upon a close cooperative and positive effort by government, the public and the dental profession, members of the 1974 dental class of the University of Saskatchewan (as a Department of Social and Preventive Dentistry class project) in 1970 undertook a study of dentists' attitudes to prepaid dental care programs for children in Saskatchewan. Following the provincial government's announcement regarding the dental nursing program, two third year dental students (H.E.T. and J.R.M.) did a follow-up study of dentists' attitudes to the expanded duties of dental auxiliaries in Saskatchewan. This was a summer research project supported by Medical Research Council funds. The combined purpose of this study then became to assess the attitudes of the dental profession to children's prepaid dental care programs and to the expanded duties of dental auxiliaries in Saskatchewan.

Method

Attitudes of the dental profession of Saskatchewan were assessed in this study by the use of two questionnaires. The first, mailed in 1970, dealt mainly with attitudes toward prepaid dental care plans for children in Saskatchewan. The second questionnaire concerned the expanded use of auxiliaries in a new dental nursing program which was legislated in the spring of 1972.

The first questionnaire, prepared in 1970, was mailed to each of the 211 licensed and resident dentists in Saskatchewan. The hypothetical plan for delivery of dental services used to assess the profession's attitudes toward a prepaid dental plan was based on a program in operation in the Swift Current Health Region. It assumed that all children up to the day of their thirteenth birthday whose

parents were bona fide residents of the province of Saskatchewan were eligible for dental care under the plan.

The services provided by the plan would include dental health education, the use of clinically applied and self-applied topical anticariogenic agents, and treatment services including radiographs, extractions, prophylaxis, plastic fillings, periodontal treatment and space maintainers — and specifically excluding all gold and porcelain restorations. Financial support would be provided by both provincial and local governments and by compulsory premiums paid by all residents of voting age at rates of \$6 per single person and \$12 per family per year.

Types of practitioners under the plan would include salaried and fee-for-service dentists. A salaried dentist would work a six hour day, five days a week within the plan. He would then be free to accept private patients. Salaries would range from \$12,500 to \$17,500 depending on qualifications and experience. A fee-for-service dentist would work in his own office under private practice conditions and give dental care to those covered by the plan, billing on a fee-for-service basis at 90 per cent of the provincial schedule of minimum fees.

The nature and details of this plan were outlined in a leaflet attached to each questionnaire. Also included was a letter explaining the purpose of the study. A number-coded return envelope was mailed with each questionnaire to decrease the volume of second mailings while ensuring confidentiality of returns.

All the returns were opened at one time by the class and the envelopes discarded to prevent identification. The questionnaires were then categorized and analysed according to the size of community in which each dentist practised and to his year of graduation.

In 1972 we updated the study as imminent developments in the delivery of dental care became apparent with the proposed Saskatchewan dental nurse program. All available official information on the program,¹⁸ a related mail questionnaire prepared by the authors, and a self-addressed stamped envelope were sent in a single mailing to each of the 209 dentists licensed and residing in the province. This questionnaire was designed to ascertain the dentists' attitudes toward the dental nurse program and its possible impact on the future of dental care delivery in the province.

Information on the dental nurse program, available from official printed material, was sent to each dentist. It explained that:

— The proposed dental nursing program will be offered at the new Saskatchewan Institute of Applied Arts and Science (SIAAS) in Regina and

Comparison of distributional pattern of Saskatchewan dentist population to response to mail questionnaire (1970 and 1972) by community size Table 1

Year	Pattern	Community size							
		<5,000		5,000-100,000		>100,000		Total	
		No.	%	No.	%	No.	%	No.	%
1970	Dentist population	55	26	55	26	101	48	211	100
	Responses	38	26	40	28	66	46	144	100
1972	Dentist population	45	22	53	25	111	53	209	100
	Responses	30	22	38	28	69	50	137	100

will be the first of its kind in North America. The program is designed to alleviate the critical dental health situation existing in Saskatchewan's child population — especially in the rural areas.

— The program will prepare dental nurses who will provide care to preschool and school children. Emphasis will be placed on prevention and dental health education. These nurses will be employed by the Saskatchewan Department of Public Health and will work under the general supervision of a dentist in facilities located in the communities where children attend school.

— The dental nurse training program will be of approximately two years' duration and will consist of co-ordinated classroom and clinical experiences. The curriculum will include courses in dental anatomy, art, physiology, histology, operative dentistry, first aid, dental diseases, radiography, remedial and preventive dentistry, psychology, communication, nutrition and oral hygiene. In the second year emphasis will be placed on the development of specific skills required to carry out the clinical procedures of a Saskatchewan dental nurse care program.

— The program will be open to young men and women with a complete grade 12 level. Beginning salaries are expected to be in the \$500/month range.

The results of the two questionnaires are reported in sequence. Data were compiled from all the questionnaires returned. Some questions were not answered; therefore percentages were tabulated from the total number of replies to each question. However, only the most pertinent responses have been reported here.

Results and discussion

One hundred and forty-four (68 per cent) of the 211 licensed and resident dentists of Saskatchewan

responded to the 1970 questionnaire related to a prepaid children's dental care program. One hundred and thirty-nine (66 per cent) of the 209 dentists responded to the 1972 questionnaire on expanded dental auxiliary duties. Comparison of distributional patterns of dentist population to response by community size are shown in Table 1.

These very high response rates and the striking conformity of the distributional patterns of dentist population to dentist responses by community size enhance the reliability of the data. No such comparison was made to the year of graduation because of the widely scattered distribution. However, no particular response trend was noted in relation to year of graduation.

Several dentists indicated that only a small percentage of the population was utilizing dental services on a regular basis. They felt that the "appalling ignorance" of the need for good oral health must be overcome, and that the responsibility for educating the public concerning dental health rested largely on the dental profession (followed by the school system, government health departments and the home, in that order). The dental profession thus indicated its awareness of the potential value of the school system as a source of widespread dental health education.

Dental care plan — Data from the 1970 questionnaire showed that 45 per cent of the dental profession felt there was no shortage of dentists in urban areas, while 44 per cent felt there was a moderate shortage; in sharp contrast, 89 per cent of Saskatchewan dentists indicated that there was a moderate to extreme shortage of dentists practising in rural areas. This question was repeated in the 1972 questionnaire and the results were not significant or different. From this it would appear that the manpower situation in the province has

remained static for two years. However, it was stressed by some that the manpower shortage was mostly in relation to need for dental care — not in relation to actual demand. This aspect supported the contention that public dental health education is sorely needed.

Seventy per cent of the dentists felt that if a prepaid dental care insurance plan were introduced in Saskatchewan the source of services for the plan should be in private dental offices; 26 per cent thought that special school clinics would be a more effective source of services.

With regard to the effect of such a prepaid plan on the number of dentists coming into the province, there was no real consensus — only 32 per cent of the dentists expected an increase, 37 per cent expected no change, 11 per cent predicted the number of new dentists would decrease, and 20 per cent said “don’t know.” However, 63 per cent agreed that such a plan would make it easier for a newly graduated dentist to establish a practice.

A large majority (82 per cent) indicated that they would prefer a fee-for-service under a dental care plan, 8 per cent preferred to work for a salary, and the remaining 10 per cent preferred to work completely outside any plan. This trend was the same regardless of community size or year of graduation. It was interesting to note that of the 112 dentists who preferred fee-for-service dentistry, 72 per cent thought it took less initiative to work as a salaried dentist under the plan. Of the 11 dentists who preferred salaried work, three thought it took more initiative, three thought it took the same, four thought it took less, and one was unsure. In total, 68 per cent thought that working as a salaried dentist under a dental care plan would take less initiative than working on a fee-for-service basis.

If such a plan were implemented, 59 per cent of dentists felt that they could render higher quality preventive service, 30 per cent felt that the quality would not change, 7 per cent indicated a probable decrease and 4 per cent said “don’t know.” In contrast, only 22 per cent felt they could render higher quality treatment service under a plan, 64 per cent indicated that the treatment quality would be unchanged, 12 per cent expected treatment quality to decrease, and 2 per cent responded “don’t know.” One dentist reported “I have been able to treat all children in an isolated community under a similar plan and have found it very effective.” Another added “any plan must not allow the introduction of low quality work — the main benefit would be in increasing preventive work with its consequent reduction in carious lesions.”

Eighty-eight per cent of the dentists agreed that the public would support the introduction of a prepaid dental care scheme. Following the same trend,

Distribution by community size of number and percentage of dentists favouring various types of prepaid dental care plans for children (1970)

Table 2

Type of plan	Community size						Total	
	<5,000		5,000-100,000		>100,000			
	No.	%	No.	%	No.	%	No.	%
Plan initiated by dental profession in Saskatchewan	15	41	8	23	25	48	48	39
Private insurance company coverage plan	0		9	26	6	11	15	12
Government sponsored and operated plan supported totally by tax funds	3	8	3	8	4	8	10	8
Government sponsored and operated plan with individual patient paying participation fee	19	51	14	40	12	23	45	36
Other	0		1	3	5	10	6	5
Total	37	100	35	100	52	100	124	100

Response by community size to question “Based on your own experience, are financial factors a major determinant of the amount of dental care that people receive?” (1970)

Table 3

Response	Community size							
	< 5,000		5,000–100,000		>100,000		Total	
	No.	%	No.	%	No.	%	No.	%
Yes, very important	32	87	31	77	41	62	104	73
Yes, small importance	4	10	6	15	20	30	30	21
No effect	1	3	1	3	5	8	7	5
Don't know	0		2	5	0		2	1
Total	37	100	40	100	66	100	143	100

84 per cent favoured some type of prepaid dental health program for children, although there was no real agreement as to type of plan preferred. Table 2 shows substantial preference for plans 1 and 4.

An overall 43 per cent of the dentists felt that the age-group provision offered in this plan (up to the thirteenth birthday) was satisfactory, 21 per cent felt that it was too limited, 8 per cent felt it was too extensive, 23 per cent considered it was a

Response by community size to question "Do you think that dental nurses (British type auxiliary) should be used in Saskatchewan?" (1970)

Table 4

Response	Community size							
	5,000—						Total	
	< 5,000		100,000		>100,000			
	No.	%	No.	%	No.	%	No.	%
Definitely no	6	17	16	45	23	38	45	34
No	13	35	5	14	14	23	32	24
Yes	9	24	8	22	15	24	32	24
Definitely yes	0		3	8	3	5	6	6
No opinion	9	24	4	11	6	10	19	14
Total	37	100	36	100	61	100	134	100

Response by community size to question "Do you think that dental nurses (British type auxiliary) should be used in Saskatchewan?" (1972)

Table 5

Response	Community size							
	< 5,000		5,000–100,000		>100,000		Total	
	No.	%	No.	%	No.	%	No.	%
Definitely not	3	10	7	19	11	16	21	18
No	8	28	13	35	18	26	39	29
Yes	11	38	10	27	23	34	44	33
Definitely yes	1	3	1	3	8	12	10	7
No opinion	6	21	6	16	8	12	20	15
Total	29	100	37	100	68	100	134	100

Response by community size to question "What effect do you expect the implementation of the dental nurse program to have on your workload?" (1972)

Table 6

Response	Community size							
	< 5,000		5,000–100,000		>100,000		Total	
	No.	%	No.	%	No.	%	No.	%
Long-term increase	8	25	9	22	19	27	36	25
Short-term increase	1	3	3	7	1	1	5	3
No change	7	22	11	27	36	51	54	38
Short-term decrease	9	28	8	20	9	13	26	18
Long-term decrease	5	16	7	17	5	7	17	12
No opinion	2	6	3	7	1	1	6	4
	2*		3*		3*			
Total	32	100	41	100	71	100	144	100

*Number of dentists answering both short-term decrease and long-term increase

satisfactory introductory age only and 5 per cent had no opinion.

While only 61 per cent of the total sample expected their net earnings to increase under a children's dental care plan, 78 per cent of the rural dentists (under 5,000) felt that their earnings would increase. This response correlated well with the response to the question related to the effect of the financial factor on the level of dental health care (Table 3).

The majority (73 per cent) of dentists felt that financial factors were an important determinant of the amount of dental care received, although this appears to be of more importance in rural areas. It was stressed several times that the suggested premiums (\$6 and \$12) were ridiculously low. An overall 82 per cent of the dentists felt that implementation of such a prepaid dental care plan for children, as outlined in the 1970 questionnaire, would increase their workload. The increase was expected mainly from those covered by the plan. Eighteen per cent felt there would be no change in their workload, but none believed a decrease would occur.

In rural communities (under 5,000) 49 per cent of the dentists felt they could accommodate the increase in their workload, but in larger centres only 36 per cent felt they would be able to accommodate an increase with their present facilities.

Expanded duty auxiliaries — Response to the question about whether British type auxiliaries should be used in Saskatchewan is shown in Table 4.

Although a majority of dentists indicated that they were unable to accommodate an expected increase in workload under a prepaid dental plan, 58 per cent were against the use of dental nurses, and only 29 per cent in favour. Those against indicated that they would prefer to accommodate the increased workload with various combinations of increased numbers of assistants and hygienists.

In the 1972 questionnaire, responses to the question regarding the use of expanded duty dental auxiliaries are given in Table 5.

A comparison of Tables 4 and 5 shows that the percentage of dentists opposed to the use of dental nurses fell from 58 per cent in 1970 to 47 per cent in 1972, and the percentage favouring dental nurses rose from 29 per cent in 1970 to 40 per cent in 1972.

Overall, 56 per cent of the dentists believed that the public would support the dental nurse program, 3 per cent felt the public would definitely oppose it, 37 per cent felt the public would be indifferent and 4 per cent had no opinion. In this connection, it is worth recalling the 88 per cent who felt that the public would support the initial 1970 plan.

The expected effect of this program on the dentists' workload is portrayed in Table 6. Twenty-

eight per cent of the respondents expected the dental nurse program to create an increase in workload, 38 per cent expected no change and 30 per cent expected a decrease. Some dentists thought the program would cause a short-term decrease in workload followed by a long-term increase. It is also noteworthy that 51 per cent of dentists in large urban areas expected no change in the workload, whereas only 22 per cent of those in rural and 27 per cent in small urban districts held the same opinion.

When questioned as to whether the clinical training of auxiliaries would be adequate to qualify them to carry out the clinical procedures to a satisfactory level of competence, only 19 per cent stated "yes" and 45 per cent "no." Thirty-six per cent said "don't know," probably due to the fact that published information on the program circulated with the questionnaire did not specify details of the amount of training or what procedures he/she would be doing in practice.

In any event, after the government had announced this program, 59 per cent of the dentists expected the quality of preventive dentistry to increase under such a program. The expected increase in quality was cited mostly in the rural areas where 76 per cent of dentists expected a quality increase, compared to only 63 per cent in small urban centres and 50 per cent in large urban centres. When it came to treatment dentistry, only 14 per cent felt the quality would increase, 23 per cent expected no change, 42 per cent expected quality lower than at present and 21 per cent responded "don't know."

Forty-five per cent of the dentists said they would hire a graduate dental nurse to work in their practices. Most respondents who would hire a nurse felt she would ease the workload, leaving the dentist more time for more complex treatment. Many dentists stipulated that they would hire a nurse for prevention and education — not treatment — and only under "in office" supervision. Thirty-three per cent said they would not hire a dental nurse and 22 per cent were unsure. Many dentists commented that they did not have the space or facilities to accommodate a dental nurse in their practice. Some felt the nurses would not be adequately qualified; others stated that they would wait until the nurses had proven themselves before they would hire one. One dentist felt adequate supervision would take all his time and another said he would never allow a technician to give local anaesthetics. Some commented that Saskatchewan does not need treatment auxiliaries and that hygienists, if more were trained, could adequately take care of the preventive requirements. Some dentists felt that their patients expected personal care by the dentist. It was also brought out

Response by community size to the question "How should the formally trained dental nurse carry out her functions within the Saskatchewan dental care program?" (1972)

Table 7

Types of programs	Community size							
	< 5,000		5,000–100,000		>100,000		Total	
	No.	%	No.	%	No.	%	No.	%
Examination, diagnosis and treatment planning done by the dentist, and duties delegated to the dental nurse to be carried out under "in office" supervision by the dentist	15	50	25	66	39	57	70	58
Examination, diagnosis and treatment planning done by the dentist and duties delegated to the dental nurse with intermittent supervision by the dentist	11	36	8	21	18	27	37	27
Regional supervision by a dentist, i.e., a dental nurse would work alone apart from general regional policy planning and intermittent visits by a dentist	2	7	1	3	7	10	10	7
The dental nurse would work independent of the dentist	0		0		1	2	1	1
Other	2	7	4	10	3	4	9	7
Total	30	100	38	100	68	100	136	100

that the purpose of the program was to provide care in the schools and in rural areas and, therefore, hiring a dental nurse would defeat the purpose of the program.

Dentists were also asked how the trained dental nurse should carry out her functions within the Saskatchewan dental care program (Table 7).

Faced with the reality of dental nurses in Saskatchewan 85 per cent of the dental profession supported a program wherein examination, diagnosis and treatment planning would be done by a dentist, with duties delegated to a dental nurse to be carried out under "in office" or "intermittent" supervision of a dentist. It is of interest to note that the

	Community size			Total
	< 5,000	5,000–100,000	>100,000	
Dental nurse program	4	4	2	4
College of Dentistry – dentist training	1	1	1	1
Certified dental assistant program	3	2	3	3
Dental research	2	3	4	2
Other	5	5	5	5

of distributional patterns of dentist populations to respondents by size of community, it is reasonable to assume that the results of the two questionnaires provide a reliable assessment of dentists' attitudes to prepaid children's dental care programs and the expanded duties of dental auxiliaries in Saskatchewan. The dentists' responses to both questionnaires reflect the following attitudes:

1. Lack of adequate dental care in Saskatchewan is related to: (a) financial factors, (b) a public poorly informed about good oral care and (c) a moderate to extreme shortage of dentists, particularly in rural areas.

2. A large majority of dentists favour a children's prepaid dental care program of some type and believe that it would be well received by the public. There is a strong feeling that it should be initiated by the profession.

3. The public would give less support to the new dental nurse program than to a "1970" type of program.

4. The dental profession has a major responsibility for dental health education of the public, but the school system and public health services, among others, should share in this responsibility.

5. An immediate plan for a dental health education program stressing prevention, and including water fluoridation, is of utmost importance.

6. In 1970 the dentists were 2:1 against the use of a dental nurse, but by 1972 were about equally divided (for – 40 per cent; against – 45 per cent).

7. A preponderance of Saskatchewan dentists contend that examination, diagnosis and treatment planning should be done by a dentist. Certain other duties must be delegated to a dental nurse and performed either under "in office" or "intermittent" supervision of a dentist.

8. The 1970 (hypothetical) type of children's dental care program would increase the quality of preventive services, with no appreciable change in quality of treatment services, but the new dental nurse program, while increasing the quality of preventive services, would decrease the quality of treatment services.

9. The new dental nurse program, instituted by the government, is viewed by some as a threat to the dentist's independence as reflected by (a) preference for a children's dental care program initiated by the profession, (b) substantial preference for fee-for-service private practice rather than salaried employment in a dental care program and (c) that dental care services should be largely rendered in the private office.

Near the beginning the view was expressed that the best interests of all concerned can only be served by a positive and cooperative effort, largely on the part of the dental profession, the people and

Oxbow¹⁶ project has "in office" supervision, and the Yukon¹⁴ program has "intermittent" supervision by a dentist. Regional supervision by a dentist was acceptable to only 7 per cent of the profession, and only one dentist felt that the nurse should work independently.

We then asked where priorities should be placed when allotting finances to dental education in the province (Table 8). Dental training at the College of Dentistry, University of Saskatchewan, was by far the first choice. Dental research came second, the certified dental assistant program was a very close third and the dental nurse program ranked fourth. The column for "Other" priorities ranked fifth but brought forth some very interesting comments. Dentists suggested that more stress should be placed on training good certified dental assistants and that Saskatchewan needs a school of dental hygiene. Other suggestions included the introduction of postgraduate and up-grading courses for Saskatchewan dentists and more widespread fluoridation in the province.

It is noteworthy and gratifying that the response to these questionnaires was very high – 68 per cent in 1970 and 66 per cent in 1972. The response to both questionnaires indicates that the profession generally is much in favour of a prepaid dental care plan for children. However, 39 per cent felt it should be under the aegis of the dental profession. The dentists seriously questioned the manner in which a dental care plan should be implemented. For example, in 1972, 40 per cent favoured the use of the dental nurse auxiliary while 47 per cent were opposed.

Conclusions

Based on the large percentages of respondents (68 and 66 per cent) and the remarkable similarity

their elected representatives. Unilateral action by any partner can threaten this goal; an even greater threat may be inaction, or action that is not marketable and does not fulfil the needs and expectations of our society.

Summary

In 1970 a mail questionnaire was sent to the 211 dentists licensed and resident in Saskatchewan to assess their attitudes to some form of a children's prepaid dental care program in that province. Following the announcement by the provincial government of the initiation of a dental nurse program in 1972, a second questionnaire was mailed to the 209 licensed and resident dentists in the province to assess their opinions on this new development in health care delivery.

This study was funded in part by the Medical Research Council of Canada.

The 1974 dental class, University of Saskatchewan, expresses appreciation to J. Crawford, Department of Social and Preventive Medicine, for his assistance with the designing of the 1970 questionnaire.

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EXECUTIVE DIRECTOR'S PAGE . . .

(continued from page 15)

The concept of the building design along with cost estimates was presented to the 1972 Board by the architect. Proposals for financing the project — which will cost approximately a million dollars — were presented by the Executive Council.

After lengthy study the Board endorsed the design of the building and agreed that construction should start as soon as financing and other details can be arranged. Financial arrangements are to include use of \$75,000 of the Association's reserve funds, the sale of the present building, donations, and borrowed funds. A campaign for building fund donations was also authorized.

While it is possible for the Association to obtain sufficient mortgage money to construct the building, the annual cost of such money at current mortgage

rates is prohibitive. The Association must therefore find ways of reducing the annual principal and interest payments to bring them within manageable limits. To this end every effort is being extended by the Executive Council to achieve the desired objective.

The Board of Governors, the Executive Council, the Headquarters Organizational Review Study, the Ad Hoc Committee on Priorities and most of the corporate members have all supported the principle of moving the Association headquarters to Ottawa as a means of providing more effective services. The move can only be accomplished by cooperation and participation from the individual members. Every dentist will be given an opportunity to become personally involved with this all-important decision: a decision that will unquestionably have immediate and long range beneficial effects for Canada's dental profession and the public it serves.

An oral antiseptic for the control of post-extraction bacteraemia

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A sodium perborate-ascorbic acid oral antiseptic used as a pre-operative mouthwash and sulcus irrigant significantly reduced the incidence of post-extraction bacteraemia. The authors recommend the use of such disinfectants prior to all traumatic dental operations. In cardiac patients, however, they should only be used as an adjunct to antibiotic therapy.

L'acide perborate ascorbique de sodium utilisé comme antiseptique buccal appliqué comme rince-bouche pré-opératoire et pour irriguer le sillon a permis de réduire effectivement la fréquence de la bactériémie post-opératoire. Les auteurs recommandent l'application de désinfectants de ce genre avant toute intervention dentaire traumatisante. Toutefois, pour les cardiaques, cet antiseptique doit être utilisé uniquement comme un auxiliaire à la thérapie antibiotique.

Numerous reports in the literature support the fact that post-extraction bacteraemia occurs in a high percentage of cases.^{1,2} The potential hazard of blood stream contamination has been discussed in a recent publication.³ To lower the incidence and minimize the risk of bacteria entering the circulatory system, a variety of antibiotics has been used with varying success,^{1,3,4} the rationale

for prophylactic antibiotic therapy being that organisms are killed in the blood stream before they are able to establish infection — the most serious being endocarditis.

There is little doubt that the most efficient method of inhibiting such infection is the systematic application of antibiotic agents, especially in cardiac, debilitated, geriatric and post-surgical cardiac patients. For the patient without a history of rheumatic fever or who does not fall into the aforementioned categories, a less stringent régime would be more practical.

Because they may provoke such side effects as nausea, vomiting and diarrhoea, not every dentist is anxious to place patients on antibiotic therapy. Taking these facts into consideration it was of interest to investigate topical anti-infective agents for the inhibition of micro-organisms prior to exodontia or other surgical procedures.

Topically administered antibiotics would be useful for this purpose but are contra-indicated because of the dangers of tissue sensitization and the risk of superinfection due to an overgrowth of yeasts. As an alternative pre-operative preparation, topical oral antiseptics may produce a local degerming effect with a lessening of the circulatory invasion by the oral microflora.^{5,6} The micro-organisms isolated from the positive blood cultures are those commonly found in the gingival sulcus. Most of them belong to the anaerobic species which are prevalent in deep periodontal pockets. They gain entrance into the circulation during the trauma of surgery. It is possible that the resulting bacteraemia could be partly prevented by destroying or removing the bacterial masses in this area.

Only one anti-infective agent was investigated in this pilot study. The following report shows the results of an attempt to lower the incidence of post-extraction bacteraemia by using a sodium percarbonate-ascorbic acid compound (Ascoxal®, Astra) as a mouthwash and irrigant of the gingival sulcus of the tooth to be extracted.

Materials and methods

One hundred and seventy-five patients requiring routine single, uncomplicated extractions were studied. None had a significant medical history or received medication of any kind. Both males and females between the ages of 16 and 60 were accepted for the study.

One hundred patients in whom surgery was carried out without preparation of the sulcus were used as controls. A second control group of 25 patients was treated with sterile saline as a substitute for the disinfectant and following the same procedure. The test group consisted of 50 patients treated with the antiseptic.

Each patient of the normal saline control group and antiseptic test group rinsed his mouth vigorously with 15 ml of saline or of the prepared disinfectant (one tablet in 15 ml of water) for approximately one minute prior to the injection of the local anaesthetic. Following this and immediately prior to surgery the gingival sulcus of the tooth to be extracted was irrigated with 10 ml of the designated solution using a 10 ml syringe and a blunted 20 gauge needle.

Directly following the extraction 20 ml of blood were drawn from the cubital veins of all patients using the sterile fluid path procedure into Vacutainer culture bottles containing trypticase soy broth with carbon dioxide (Becton Dickinson). Ten millilitres of blood were collected in each of two units, one of which had the vacuum broken, providing aerobic conditions while retaining the anaerobic conditions in the other. The blood cultures were incubated at 37°C and examined periodically for evidence of growth, at which time 10 ml of the sample were centrifuged at approximately 2,000 rpm for five minutes. The sediment was examined microscopically and inoculated onto two blood agar plates one of which was incubated aerobically and the other anaerobically. All cultures not showing visible growth within 21 days were opened and examined in the same manner before being recorded as negative.

Results

Normal control group — Fifty-one per cent of these patients had positive blood cultures. The bacteria isolated were those which are commonly found in the gingival sulcus.

Saline control group — Sixty per cent of the patients subjected to the saline mouthwash and sulcus irrigation prior to surgery had positive blood cultures. This is an increase above the untreated controls. The majority of bacterial species isolated

belonged to the group of strict anaerobes found in the deep periodontal pockets. Growth was very rapid (six – eight days) and heavy, indicating a large inoculum.

Antiseptic test group — Eighteen per cent of the patients who were treated pre-operatively by mouthwash and irrigation of the gingival sulcus with the antiseptic had positive blood cultures. The majority of the cultures consisted of single species which were isolated at the end of the incubation period (18–20 days), indicating a light inoculum.

The comparative results for the three groups are shown in Table 1. The most striking observation is the number of anaerobic cultures obtained from the saline control group, exceeding those from the normal controls, and the concomitant dearth of the bacterial species isolated from the test group.

Percentage of organisms isolated from positive blood cultures

Table 1

Species	Normal controls	Saline controls	Treated series
Peptostreptococci	31	16	8
Diphtheroids (aerobic)	17	12	2
Diphtheroids (anaerobic)	3	16	
Micrococci (coagulase negative)	14	3	8
Veillonella	18	28	
Bacteroides	15	36	2
Alpha streptococci	13		
Fusobacterium	10	12	2
Enterococci	6	4	
Actinomyces	4	16	4

Discussion

The results show that pre-operative saline mouth rinsing and irrigation of the gingival sulcus adjacent to the tooth to be extracted actually raise the incidence of post-extraction bacteraemia. The addition of a disinfectant to the solution reduces the incidence, however.

Irrigation under pressure has been advocated as a means of loosening dental plaque and debris from the operative area in order to diminish the danger of postoperative infection,⁷ and large numbers of bacteria have been demonstrated in the sediment of centrifuged post-irrigated expectorant. Therefore, it is possible that the pressure applied in the syringing procedure could drive the homogenized bacterial masses of the deep periodontal pockets into the hyperaemic and oedematous gin-

gival tissue, thus permitting easy entry into the circulation at the time of surgery. This would explain the high incidence of bacteraemia following saline irrigation. It would also explain the mixtures of bacteria isolated in such blood cultures. These cultures frequently showed heavy growths in six to eight days, with marked gas formation and putrefaction not encountered in the control cultures. This could be a direct result of the deep-seated anaerobic flora which may have been forced into the inflamed tissue by the irrigation. A similar physical effect could have been elicited in the antiseptic test group, but in this case the disinfectant may have prevented many of the organisms from entering the blood stream.

No pre-operative blood cultures were taken because they contribute nothing to the investigation. Wiesenbaugh⁸ found such cultures to be negative in earlier studies and, taking the patients' comfort into consideration, this procedure was omitted.

Ascoxal® consists of sodium percarbonate, ascorbic acid and traces of copper sulphate as a catalyst. Formation of hydrogen peroxide is involved in its mechanism of action but its disinfectant role is considered to be dependent on the oxidation of the ascorbic acid (Asc-ox-reaction). Part of its antimicrobial effect is also attributed to the depolymerization of polysaccharides or mucoids of the micro-organisms.⁹ It has been used in the treatment of a variety of infections of the oral mucous membranes.¹⁰

In the recent study, Scopp and Orvieto⁶ found that the incidence of post-extraction bacteraemia could be reduced by gingival degerming with povidone-iodine solution. The present investigation supports their conclusion that oral antiseptics, both as mouthwashes and sulcus irrigants, should be used prior to traumatic dental procedures. In the cardiac patient, however, they should only be used as an adjunct to antibiotic coverage.

In view of the results following saline irrigation of the operative area no attempt should be made to syringe the sulcus without the incorporation of a disinfectant in the solution, and only those antiseptics which have proven effective should be used. The dangers of haphazard syringing of the sulcus under pressure cannot be over-emphasized. Although oral antiseptics have not been universally

accepted by practising dentists, this study indicates a definite use for such agents.

Summary

A sodium perborate-ascorbic acid antiseptic (Ascoxal®) was investigated as a topical prophylactic agent for the possible reduction of post-extraction bacteraemias. It reduced the incidence from 51 per cent in normal controls and 60 per cent in saline controls to 18 per cent. This antiseptic is recommended for use in the normal, healthy patient but is not intended as a substitute for the systemic administration of antibiotics to cardiac patients undergoing traumatic dental procedures.

Dr. Francis is professor, Department of Pharmacology, Dr. deVries is associate professor, Department of Microbiology, and Mrs. Lang is a research assistant at the Faculty of Dentistry, McGill University, PO Box 6070, Montreal 101, Que.

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ONTARIO — Associate wanted, busy general practice, 100 miles east of Toronto. Good emphasis on preventive care, use of audio-visual aids, etc. Well equipped and well staffed office. Reply in writing to Dr. D. H. Bunt, 42 Dundas Street West, Trenton, Ontario K8V 3P2 or telephone collect, 1-613-392-4757 or 1-613-392-9379.

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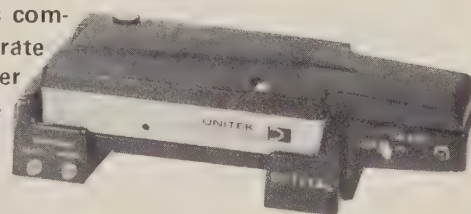
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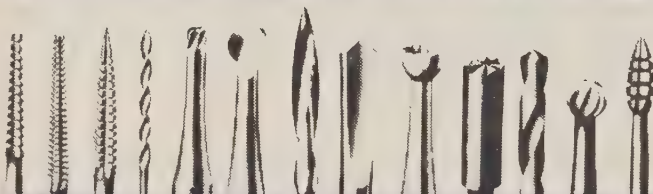
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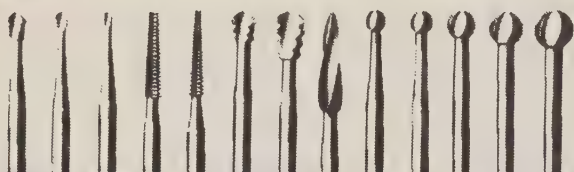
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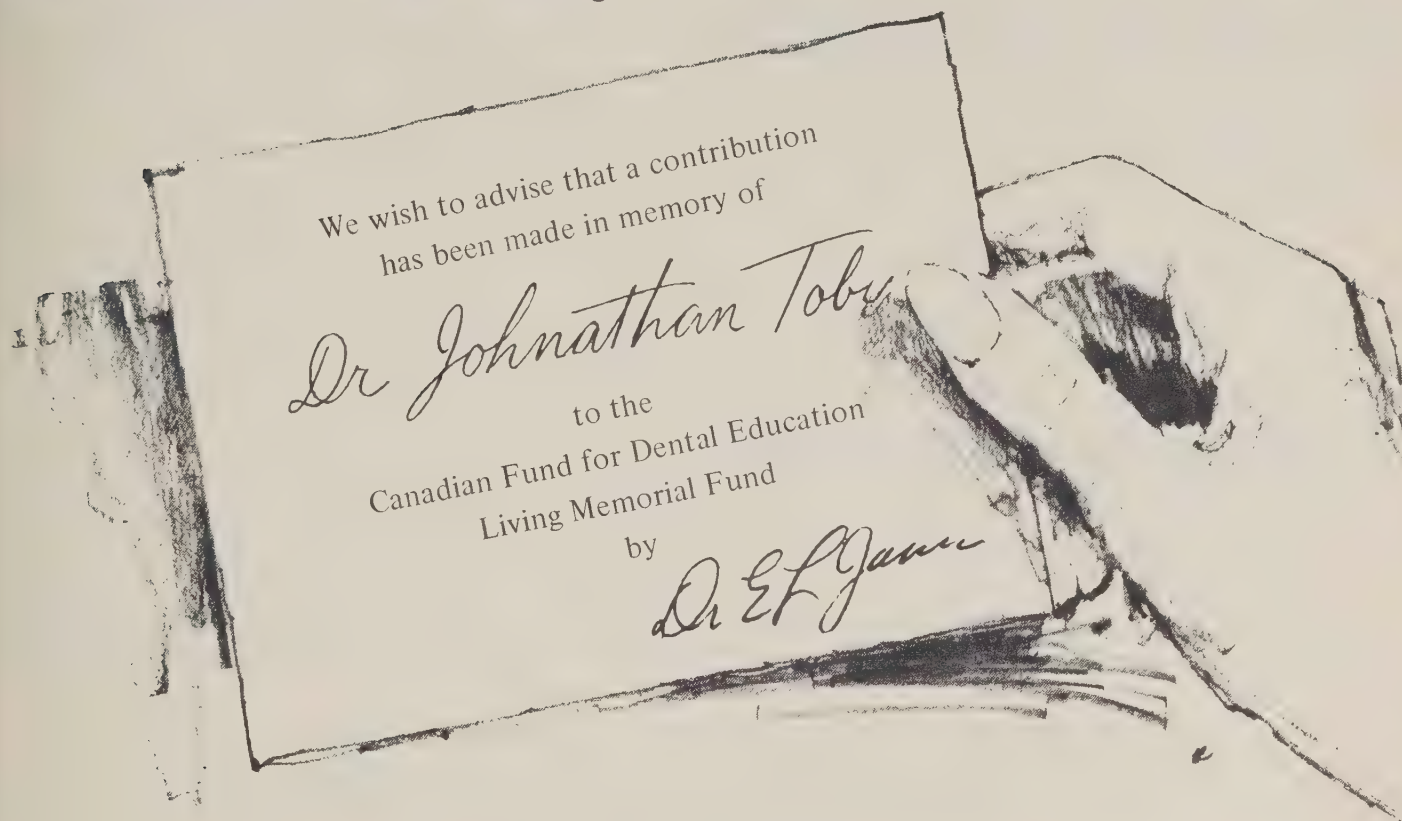
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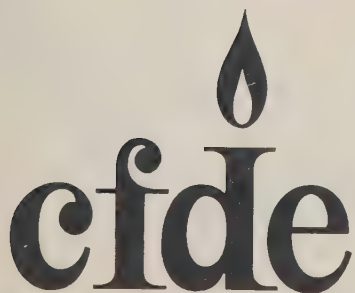
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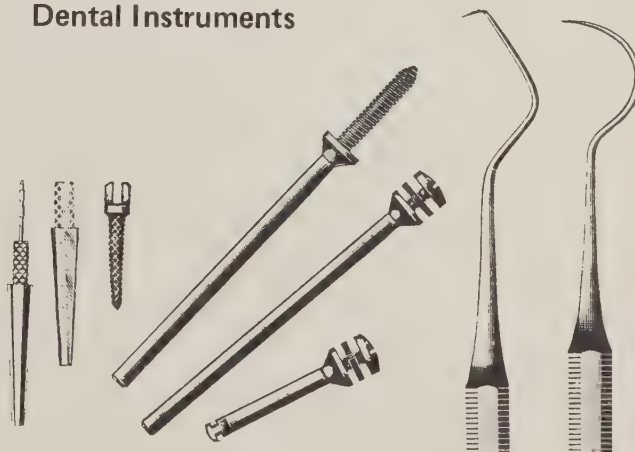
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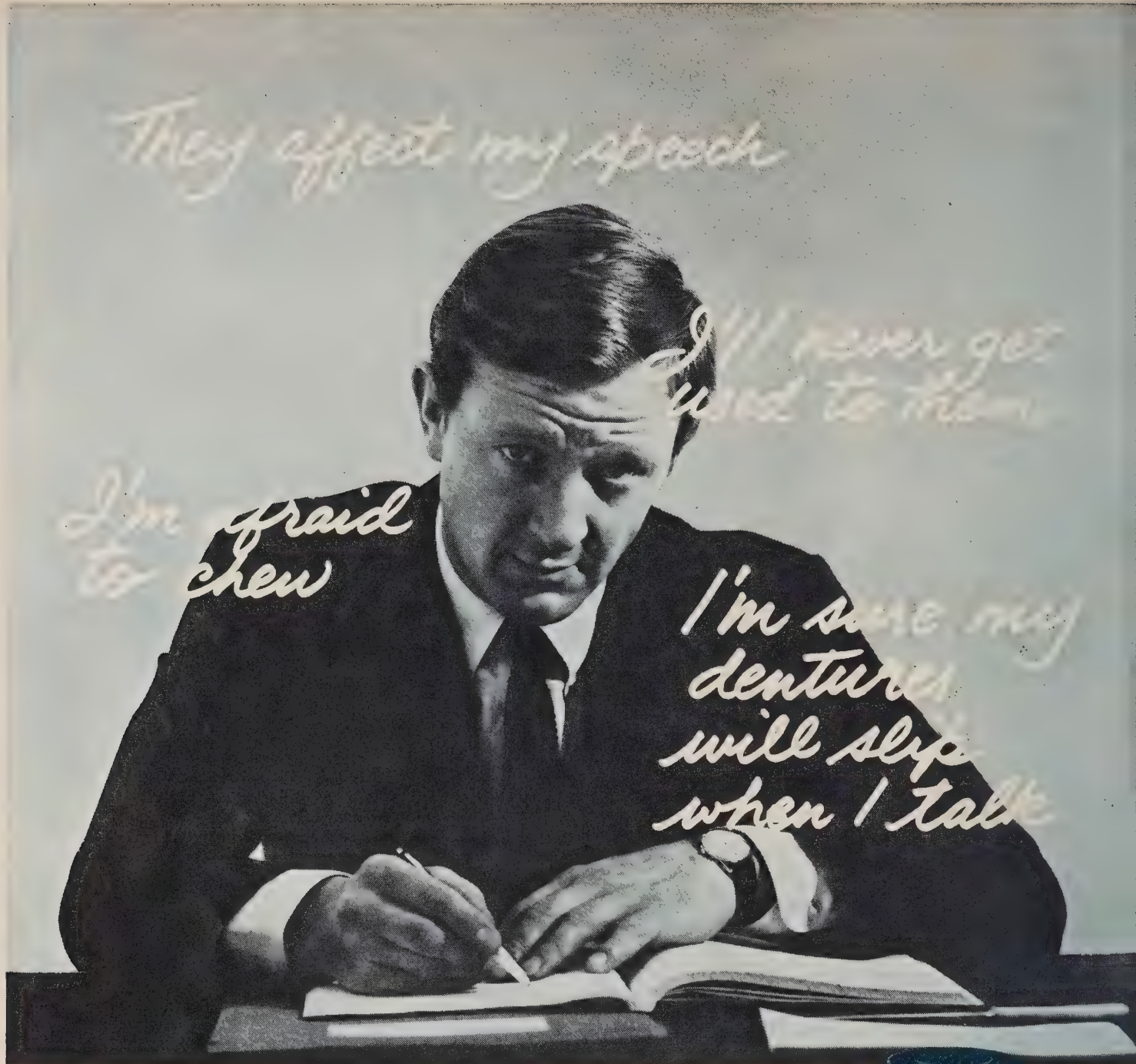
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Feb/Fév 1973/ Volume 39/No 2

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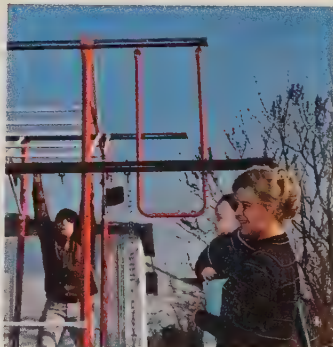
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Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont, Oct 2-5
1975 St. John's Nfld, Aug 17-20

Fédération Dentaire Internationale

1973 Sydney, Australia, July 15-20
1974 London, England, Sept 8-14

Canadian Meetings

Canadian Public Health Association, at Queen Elizabeth Hotel, Montreal. Apr 24-27, 1973. Canadian Public Health Association, 1255 Yonge St, Toronto 7, Ont.

Les Journées Dentaires du Québec, at l'Hôtel Bonaventure, Montréal. 25-27 avril 1973. Denis LaFlamme, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. Apr 25-27, 1973. Denis LaFlamme, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of Saskatchewan, at Regina. May 4-5, 1973. T.E. Donovan, 205 McCallum Hill Bldg, Regina, Sask.

Ontario Chapter, Canadian Society of Dentistry for Children, at Royal York Hotel, Toronto. May 13, 1973. A. F. Dungy, Ontario Crippled Children's

Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Royal York Hotel, Toronto. May 13-16, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont.

Canadian Academy of Oral Pathology, at Montreal. May 14-19, 1973. Dennis Forest, Faculté de chirurgie dentaire, Université de Montréal, CP 6128, Montréal 101, Qué.

Association des Spécialistes en Chirurgie Buccale du Québec, à Montréal. 15-16 mai 1973. Guy Maranda, 565 St-Jean, Québec 4, Qué.

American Academy of Oral Pathology, at Bonaventure Hotel, Montreal. May 15-19, 1973. G. G. Blozis, College of Dentistry, Ohio State University, Columbus, Ohio 43210, USA.

Alberta Dental Association, at Lethbridge. June 7-8, 1973. R. D. Kinniburgh, Centre Village Mall, 1204-2nd Ave A N, Lethbridge, Alta.

Association of Canadian Faculties of Dentistry, at Château Montebello, Montebello, Que. June 12-15, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Western Canada Dental Society, at Winnipeg. June 27-30, 1973. J. P. Beattie, 308 Kennedy St, Winnipeg 2, Man.

Dental Hygiene Section, Western Canada Dental Convention, at Winnipeg Inn, Winnipeg. June 30, 1973. Mrs. Vivian Burdenium, 2 Peel Cres, Winnipeg, Man.

Northern Ontario Dental Association, at Kirkland Lake, Ont. Sept 7-9, 1973. J. H. Mucklow, 26 Government Rd W, Kirkland Lake, Ont.

Canadian Society of Oral Surgeons, at Mont-Gabriel Lodge, Mont Gabriel, Que. Oct 4-9, 1973. Pierre Surprenant, Suite 201, 230 King St W, Sherbrooke, Que.

Canadian Academy of Periodontology, at Vancouver. Oct. 12-13, 1973. J. D. Stewart, 311 Rubidge St, Peterborough, Ont K9J 3P3.

Canadian Academy of Restorative Dentistry, at Vancouver. Oct 12-13, 1973. E. V. Gowda, Suite 201, 1590 Bellevue Ave, West Vancouver, BC.

Canadian Association of Orthodontists, at Vancouver. Oct 13-15, 1973. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask S7K 3M4.

Canadian Academy of Prosthodontics, at Vancouver. Oct 13-14, 1973. W. G. Woods, 123 Edward St, Toronto 101, Ont.

Canadian Society of Public Health Dentists, at Vancouver. Oct 14-17, 1973. J. M. Conchie, 14265-56th Ave, Surrey, BC.

Canadian Dental Hygienists Association, at Vancouver. Oct 14-18, 1973. Linda J. Hunter, 3350 Cedar Crescent, Vancouver 9, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

International Meetings

Finnish Dental Society and Finnish Dental Association, at Helsinki. Mar 29-31, 1973. Finnish Dental Society, Bulevardi 30 B, SF-00120 Helsinki 12, Finland.

International Congress of Odontology and National Spanish Congress, at Barcelona, Spain. Apr 29-May 5, 1973.

A. de Udaeta, Tapineria, 10, entlo, Barcelona, Spain.

Royal Society of Health, at Eastbourne, England. Apr 30-May 4, 1973. The Secretary, Royal Society of Health, 13 Grosvenor Place, London, SW1X 7EN, England.

Northwest Academy of Dental Medicine, at the Empress, Victoria, BC. May 24-27, 1973. Gladys H. Underwood, 610 SW Alder St, Portland, Oregon 97205, USA.

British Dental Association, at Southport, England. June 11-15, 1973. J. N. Peacock, 64 Wimpole St, London W1M 8AL, England.

American Dental Society of Europe, at Lucerne, Switzerland. July 1-4, 1973. James Page, 65 Mount Ephraim, Tunbridge Wells, England.

4^e Congrès International de Pédiodontie, à Paris. 10-13 juillet 1973. Secrétariat

Société Française de Pédiodontie, 33 rue Poissonnière, Paris 2^e, France.

Australian Society of Endodontology, at Sebel Town House, Sydney, Australia. July 12-13, 1973. E. H. Ryan, 185 Elizabeth St, Sydney, 2000, Australia.

International Implant Congress, at Sydney, Australia. July 12-14, 1973. T. T. Vajda, PO Box 1478, GPO Sydney, NSW, Australia, 2001.

Fédération Dentaire Internationale and Australian Dental Congress, at Sydney, Australia. July 15-20, 1973. G. H. Leatherman, 64 Wimpole St, London W1M 8AL, England.

Rhodesian Dental Congress, at Victoria Falls, Rhodesia. July 31-Aug 3, 1973. A. G. Winchester, PO Box 1367, Salisbury, Rhodesia.

Third International Orthodontic Congress, at Royal Festival Hall, London,

England. Aug 13-18, 1973. W. J. Tulley, 43 Charles St, London W1X 7PB, England.

New Zealand Dental Association, at Queenstown, NZ. Sept 20-22, 1973. Alastair Murray, 69 Don St, Invercargill, NZ.

Japanese Association for Dental Science, at Tokyo. Sept 22-26, 1973. J. Okamura, c/o Nippon Dental College, Fujimi, 1-Chome Chiyoda-ku, Tokyo, Japan.

First French Congress of Stomatology and Maxillofacial Surgery, at Paris. Sept 27-29, 1973. Secretariat Mme Palaysi Institut de Stomatologie, 47 blvd de l'Hôpital, 75013 Paris, France.

Association Dentaire Française, à Parc des Expositions, Porte de Versailles, Paris. 13-18 nov 1973. Jacques Charon, 22 avenue de Villiers, 75-Paris 17^{ème}, France.

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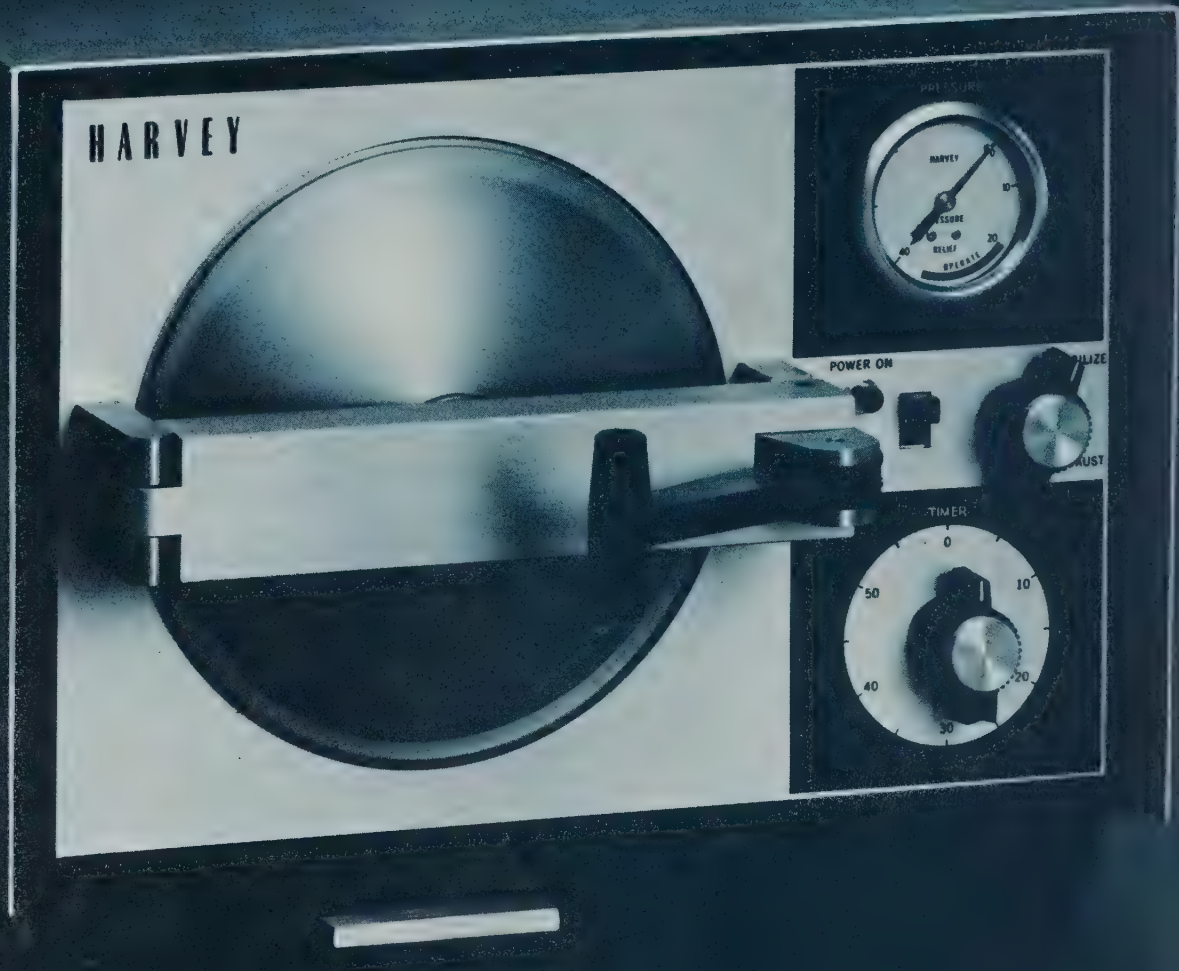
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sterilize (ster' i-liz). To render sterile;
to free from microorganisms. ¹

1. Dorland's Illustrated Medical Dictionary
W.B. Saunders Company 24th Edition 1965

MDI chemical
company

put us in your hands

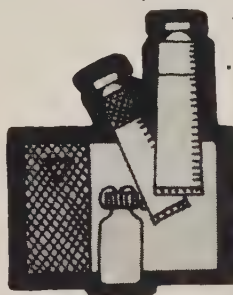
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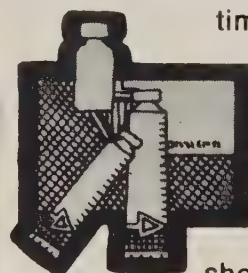
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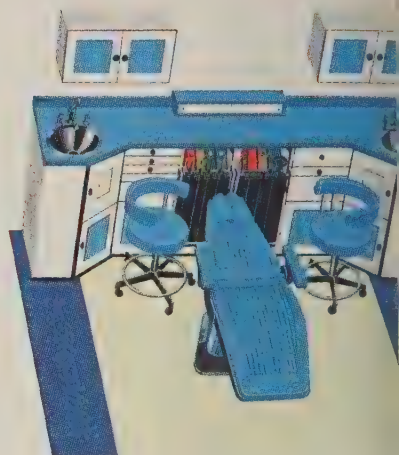
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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

Plaque-free in '73

Just as I was leaving the office one Friday evening the phone rang. The caller, obviously a well educated, well spoken young man, had just left his dentist's office. And he was upset. He had just been told he should have three molars removed and have three fixed bridges inserted to replace them. The cost — 'X' dollars.

The young man praised the care and concern with which his mouth had been examined by the dentist. He was impressed with the clear explanation he had been given of the dental problems and the logical presentation of the treatment plan. He was thoroughly convinced he needed three teeth removed and three bridges inserted. In fact, this was the course of treatment he wanted.

Why, then, was he upset and why was he calling the Canadian Dental Association?

The caller wanted to take his dentist's advice. He wanted to look after his mouth. But he could see no possible way he could afford 'X' dollars. Could the Association by any chance suggest a way of solving his problem?

After we had talked a few minutes the agitation in his voice left and he began to talk a little about his background. Apparently, as a child he had had no regular dental attention. His parents had neglected this particular aspect of his upbringing. He now has poor teeth and is faced with the task of repairing damages that probably could have been prevented by the application of good home care procedures and regular visits to his dentist. He bit-

terly regrets the lack of attention to oral health during his childhood.

This one phone call is typical of a great many that we are receiving at CDA headquarters with increasing frequency. It seems a fitting introduction to the topic of National Dental Health Week for 1973.

The Canadian Dental Association and the 10 provincial associations are identifying the week of February 4 - 10, 1973, as National Dental Health Week in Canada as a means of emphasizing to the public the need for dental health and the importance of preventing dental disease.

This is the first time Dental Health Week in Canada has been observed in all provinces at the same time and simultaneously with the Children's Dental Health Week in the United States. The theme for observance of the week is "Plaque-free in '73."

The CDA's Bureau of Public Information solicited the cooperation of each of the 10 provincial corporate members in making this year's observance nation wide. The Bureau developed organizational kits containing program planning suggestions, suggested talks for school and adult audiences, a series of six newspaper articles, the CDA's Public Relations Manual, a sample 'proclamation form' that can be used in getting the local mayor's signature, and lists of other materials available from headquarters. One hundred of these kits were distributed among the provincial associations.

In addition, the Bureau has supplied the corporate members with 10,000 "Plaque-Free in '73"

posters, 100,000 pamphlets entitled "What Your Family Should Know about Dental Plaque" and 200 "Citation" forms for distribution to individuals and firms whose promotion of the week has been outstanding.

The mass media has also been contacted. A new 30 second film clip called "Smiling" and a coloured slide showing the week's 'theme' have been distributed to TV stations across the country with the request they be given heavy airing during the week. Special newspaper columns have been written for both the "Dental Topics" column in Canada's weekly newspapers and for CDA's weekly question and answer column in the *Toronto Star*. Three pertinent radio spot announcements in English and French have also been supplied to Canada's radio stations.

These activities are listed only to give the Association's members some idea of what their Bureau of Public Information has done to help promote the 1973 National Dental Health Week. It is by no means a complete list as projects were still being developed — such as efforts to gain the Prime Minister's assistance in promoting the week — when this page was written. Also, the 10 provincial chairmen for Dental Health Week will have developed other promotional programs particularly suitable for their own areas.

The provincial chairmen and CDA's Bureau of Public Information will appreciate the help and support of every dentist in promoting dental health and the prevention of dental disease every week in the year, but especially during Canada's National Dental Health Week February 4-10, 1973. Remember it's to be "PLAQUE-FREE in '73!"

**Provincial chairmen for
National Dental Health Week - February 4-10, 1973**

British Columbia —

Dr. M. J. Tonks
624 - 6th Street
New Westminster, BC

Alberta —

Dr. J. T. Boulton
7 Parkdale Crescent NW
Calgary, Alberta T2N 3TB

Saskatchewan —

Dr. C. R. Hill, President
College of Dental Surgeons of Saskatchewan
415 - 24th St E
Saskatoon, Sask

Manitoba —

Mr. R. H. McIntyre, Secretary-Treasurer
Manitoba Dental Association
308 Kennedy St
Winnipeg, Man R3B 2M6

Ontario —

Mr. Ray Argyle
Ontario Dental Association
230 St. George St
Toronto, Ont M5R 2P1

Quebec —

Dr. D. LaFlamme, President
Dental Hygiene League of Quebec
4290 est Beaubien
Montreal 409, Que

New Brunswick —

Dr. H. H. Peters, Executive Director
New Brunswick Dental Society
440 Champlain St
Saint John West, NB

Nova Scotia —

Dr. S. G. Bagnall, Executive Secretary
Nova Scotia Dental Association
PO Box 604
Halifax, NS

Prince Edward Island —

Dr. P. Creighan
8 Elizabeth Dr
Parkdale, PEI

Newfoundland —

Dr. G. Anthony, Secretary
Newfoundland Dental Association
PO Box 9505
St. John's, Nfld

NEW

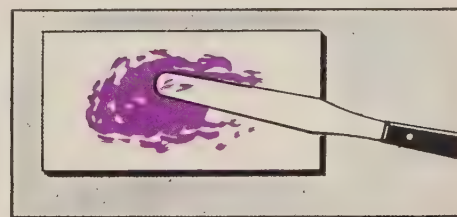
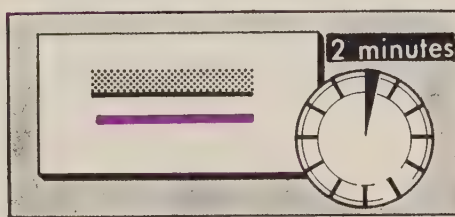
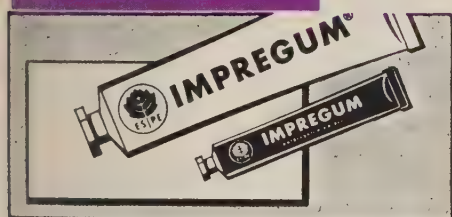
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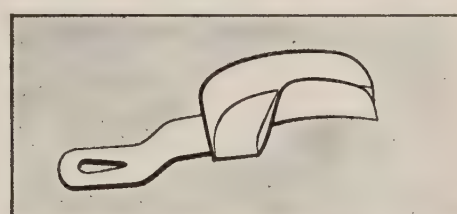
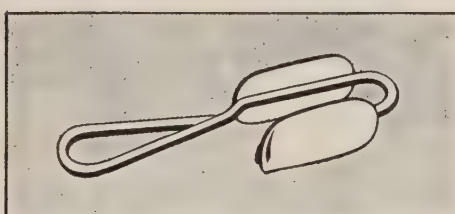
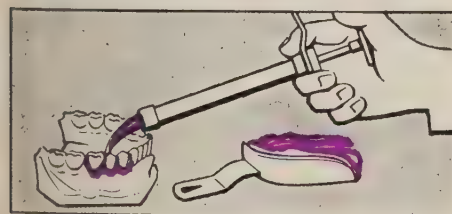
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Letters/Courrier

Licensure reciprocity

The article entitled "Dental Licensure Reciprocity" in your September, 1972 issue rates a star for tunnel vision. The implementation of the concept of a "national standard for accreditation of Canadian dental schools" with the consequent national acceptance of their graduates as bona fide practitioners is a step toward maturity as a profession. To restrict this national acceptance to recent graduates is unpardonable.

As a graduate of McGill University carrying 22 year old dental credentials, I take violent exception to the thesis that the dental profession is serving the public trust by disallowing practitioners with "20 year old dental credentials" to practise in their neighbouring provinces by virtue of the fact that these "20 year old dental credentials, by themselves, do not meet the modern requirements for registration and licensing." All is well so long as these antiquated practitioners are kept from spilling over into other provinces.

It should be painfully evident to students, young practitioners, old practitioners and, more important, all provincial and federal ministers of health that "Canadian graduates of previous years without the certificate of the National Dental Examining Board" must be allowed to practise in the province of their choice for if they are not, then the converse must hold — namely that these same individuals must be stopped from rendering irreversible damage to the public of their respective regions by being allowed to practise therein.

In closing, I quote Dr. Yeo's final paragraph in the article and in doing so award him full marks and full credit for same:

"For some reason 'national' seems to have become a dirty word in this country. Let's do our share to return it to its rightful place by establishing national standards for dentistry and national recognition of dentists through national dental licensure reciprocity."

Irwin M. Fineberg, DDS
1625 Sherbrooke St West
Montreal, Que

I am disappointed that the entire article rated a star for tunnel vision because even Dr. Fineberg gave it "full marks and credit" for the last paragraph.

I don't quite understand the precise meaning of tunnel vision but it would seem it refers to the fact that every dentist in Canada presently is not allowed to move at will to practise in any province of his own personal choice. Each province has its own Dentistry Act and sets its own policies concerning registration and licensure within its boundaries. Therefore each provincial licensing body has its own particular brand of tunnel vision depending upon how strict or how lenient its policies are.

The only real personal opinions expressed in my article concerned the updating of credentials. I expressed the opinion that those of us who have 20 year old credentials should be prepared to prove we have kept them up to date by taking the National Dental Examining Board examinations if we want to be accepted in a new province.

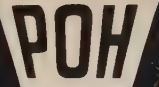
Such a statement does not infer that the original credentials are antiquated or that the individual possessing them is rendering irreversible damage to the public in his present practice location.

If I wish to move to another province I must pass an examination to get a driver's licence for that province. The fact that I am required to do so does not infer that I am raising havoc on the highways where I presently drive.

I agree with Dr. Fineberg that we should be working toward national dental licensure reciprocity. I believe we are in agreement with everything but the method. My article, although only recently published, was written some time ago. Events that have happened since it was written have shown us to be moving toward this reciprocity.

We may still be involved in tunnel vision to some extent but I believe we are now looking out of the tunnel rather than into it.

D. J. Yeo, DDS, MPH
Registrar
College of Dental Surgeons of BC
325-925 W Georgia St
Vancouver 1, BC



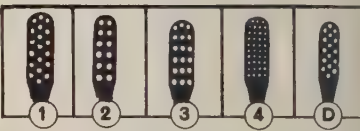
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Dosage: Adults, one or two tablets one to three times a day. Children 10-14, one tablet one to three times a day. Children 5-10, one-half tablet one to three times a day.

Contraindications: Salicylate sensitivity, peptic ulcer.

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Full information on request.

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This architectural colour rendering for the west front facade of the new two storey Ottawa headquarters for the Canadian Dental Association exhibits both simplicity in design and practical planning for economy in construction and upkeep.

The exterior surface of the building will contrast a mottled brown brick with white stone window trim and entrance design. The landsite has contour variations that move from a slight elevation on Alta Vista Drive to sloping tree-lined property at the rear.

The main entrance opens through full height glass doors into an unusual reception area and lobby, whose spaciousness makes one at once welcome, comfortable and at the same time is the main traffic artery of the building.

An inset sloping glass panel lights the reception lobby from the front and from the second floor. A two-storey panel of glass lights the lobby from the rear and east side of the building.

A glass enclosed staircase directs all access to the second floor,

where are located the main conference rooms, board room and executive offices.

The oblong building area accommodates the Association's general offices, including the editorial and operating offices for the Journal, public information services, printing department, accounting services, membership records, facilities for the aptitude test program, a statistical department and many other activities required by your Association in the service of its members.

Of particular benefit will be an excellent stack library to house the more than 5,000 scientific and technical books available through the CDA. It will be called the Canadian Dental Association's Sydney Wood Bradley Memorial Library. An archives room and a library reading room will all be specially designed around the librarian control area.



Cette esquisse architecturale en couleurs de la façade ouest du nouvel édifice à étage du siège social à Ottawa de l'Association Dentaire Canadienne reflète la simplicité du design et la conception pratique qui engendreront des économies et dans la construction et dans l'entretien.

La brique marron et tachetée de l'extérieur du bâtiment fera contraste avec les parements de pierre blanche des fenêtres et le merveilleux design de l'entrée. L'édifice sera érigé sur un terrain comportant des irrégularités naturelles, d'un point légèrement élevé sur le chemin Alta Vista à une propriété en pente bordée d'arbres à l'arrière.

Pourvue de grandes portes de verre, l'entrée principale mène dans un foyer d'entrée spacieux, accueillant et confortable et qui est aussi l'artère principale de l'édifice.

La réception est baignée de la lumière que laisse filtrer le panneau de verre incliné de l'avant et du premier étage alors qu'un panneau de verre de deux étages inonde le foyer d'entrée de la lumière provenant de l'arrière et du côté du bâtiment.

Un escalier enfermé de verre permet d'accéder au premier étage où se trouvent la salle de conférence principale, la salle du conseil et les bureaux de la direction.

L'édifice oblong accommodera les bureaux généraux de l'Association, la salle de rédaction et autres bureaux du Journal, les services d'information publique, l'atelier d'imprimerie, les bureaux de comptabilité et de souscription, les installations pour l'ensemble des tests d'aptitude, le bureau des statistiques et autres, répondant aux besoins de l'Association et de ses membres.

L'édifice abritera, en outre, une excellente bibliothèque de plus de 5,000 volumes scientifiques et techniques mis à votre disposition par l'intermédiaire de l'ADC; elle portera le nom de Bibliothèque Sydney Wood Bradley de l'Association Dentaire Canadienne. Une salle des archives et une salle de lecture ont été prévues à proximité de la bibliothèque.

LOOK FOR
A SPECIAL BROCHURE
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in your mail
mid-February, 1973

It will come addressed to
your personal attention from
The Canadian Dental Association.



Vers la mi-février 1973,
vous trouverez une brochure
traitant de l'ADC à Ottawa
dans votre courrier.

Elle aura été adressée à votre attention
par l'Association Dentaire Canadienne.

Dentistry in the news

Canada and the Provinces

Quebec police ask dentists for help in identifying dead man

The Quebec Provincial Police have asked for assistance in identifying the body of a man found floating down the North River, St. Antoine des Laurentides, near the small town of St. Canut, Quebec, on June 22, 1972.

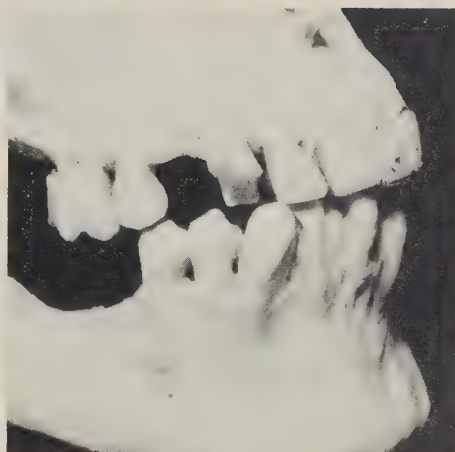
The rate of decomposition suggested that the victim had been in the water for a period of one to three months. Fingerprints were still in evidence but could not be matched to existing records of either the Royal Canadian Mounted Police or the Canadian Forces.

The victim had black hair, was five foot, ten inches tall and weighed approximately 160 pounds.

Forensic dental examination disclosed that the man was between the ages of 25 and 40, most probably in his mid thirties. The dental work present was of good quality.

Dr. R. B. J. Dorion of Montreal prepared the following detailed report of the victim's dental work at the request of the Criminal Investigation Section of the Quebec Provincial Police:

The upper anterior teeth showed full gold crowns with labial facings of cured acrylic of 20th Century shade guide number five, also comparable to Vivodent shade guide "C" IB. They were probably placed at least five years ago. The upper left central, lateral and cuspid showed a wear pattern on the labial facing characteristic of a right handed individual. The right cuspid shows an excellent preparation for a full crown, but the full crown itself was not found at the time of forensic examination.



Photographs of the unidentified victim's dentition were supplied by the Criminal Investigation Section, Quebec Provincial Police and the Medico-Legal Institute, Department of Justice of the Province of Quebec.

Another unusual finding was a Class V cavity preparation (with no dental material present at the time of examination) on the distal surface of the upper left second bicuspid; an occlusal amalgam is found on the same tooth.

The remainder of the dental characteristics can be observed in the accompanying chart and photos. Please note the lower anterior crowding.

The quality and extent of the dental work found in this unidentified man

would indicate either that aesthetics was of prime importance to him or that his socio-economic background was upper middle class. There was also some indication that this individual could have been taking some form of drug or narcotic.

Readers who have information that might aid the investigation are asked to contact: Corporal André Beauchamp, Criminal Investigation Section, Quebec Provincial Police, 1701 Parthenais, Montreal, Que.

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have this problem
and penicillin
allergy too



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"...may be used as a penicillin substitute for the patient's protection during traumatic dental procedures."¹

To determine the effectiveness of Dalacin C in preventing post-extraction infection, 75 patients were treated with Dalacin C pre-operatively. Immediately following surgery, blood was withdrawn and observed for bacterial growth. The results showed that Dalacin C significantly reduced the incidence of post-extraction bacteræmia.¹

<i>Dose Dalacin C</i>	<i>No. Patients</i>	<i>No. Bacteriologically Positive Blood Cultures Following Surgery</i>
Control Group (no antibiotic)	100	49
150 mg q.i.d. for 3 days before surgery	25	0
300 mg - 2 hours before surgery	75	4

Upjohn

1. de Vries, J., et al. (1972). J. Canad. Dent. Assn., No. 2, p. 63.



Dalacin C

for dependable prevention or control of dental infections

- bactericidal against streptococci and staphylococci (including penicillin-resistant strains)
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- available as capsules for adults and as a suspension for children

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DOSAGE AND ADMINISTRATION

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Mild to moderately severe infections: 150 mg (one capsule) every six hours.

Severe infections: 300 mg (two capsules) or more every six hours.

Children (over one month of age)

Average infections: 10 mg/kg/day (5 mg/lb/day) divided into three or four equal doses.

Severe infections: 16 mg/kg/day (8 mg/lb/day) or more if indicated by the clinical situation, divided into three or four equal doses.

DALACIN C GRANULES

Children (over one month of age)

Average infections: 12 mg/kg/day (6 mg/lb/day) divided into three or four equal doses.

Severe infections: 20 mg/kg/day (10 mg/lb/day) or more divided into three or four equal doses.

Absorption of Dalacin C is not appreciably modified by ingestion of food and Dalacin C may be taken with meals with no significant reduction of the serum level.

Note: With β -hemolytic streptococcal infections, treatment should continue for at least 10 days to diminish the likelihood of subsequent rheumatic fever or glomerulonephritis.

Cautions: Generally well tolerated. Usual antibiotic side effects — abdominal discomfort, loose stools or diarrhoea, nausea, vomiting. Transient neutropenia (leukopenia), or abnormalities in liver function tests have been observed in a few instances. Mild hypersensitivity reactions (skin rash and urticaria) have been observed on rare occasions.

Use with caution in patients with a history of asthma and other allergies. As with other antibiotics, periodic liver function tests and blood counts should be performed during prolonged therapy.

Not indicated in patients who have demonstrated sensitivity to lincomycin. Safety in pregnancy not established. Dalacin C is not indicated in the newborn.

AVAILABILITY

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150 mg Capsules — Each capsule contains clindamycin hydrochloride hydrate equivalent to 150 mg clindamycin base. Supplied in bottles of 16 and 100.

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75 mg Paediatric Capsules — Each capsule contains clindamycin hydrochloride hydrate equivalent to 75 mg clindamycin base. Supplied in bottles of 16 and 100.

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CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on December 31, 1972:

Guaranteed Fund \$10.003;

Fixed Income Fund \$13.699;

Common Stock Fund \$31.443.

Total assets (market value) of the plan were \$14,745,148.62.

The following portfolio purchases occurred during the preceding month: 5,000 Royal Trust GIR and 100 shares Fields Stores.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Research

Special toothbrush lowers temperature sensitivity

American scientists have developed a special toothbrush that produces a weak electric current and helps reduce tooth sensitivity to temperature changes.

Writing in a recent issue of the *Journal of Periodontology*, they expressed the belief that electric current stimulates the pulp to form a layer of protective secondary dentine which insulates nerves from thermal changes.

They tested the ability of fluoride and non-fluoride dentifrices to reduce tooth sensitivity when applied by brushing with and without an electric current. Weak currents are used in certain medical treatments to introduce a higher concentration of specific ions (in this case fluoride) than would otherwise cross the membrane barriers.

One hundred and ten subjects with long-term hypersensitivity to heat changes were randomly assigned to four treatment groups for a 30 day period. One group brushed with a stannous fluoride dentifrice and a standard type of nylon toothbrush. A second group brushed with a similar dentifrice without fluoride but used a specially modified toothbrush with a strip of tin foil on one side and of magnesium on the other to provide an unnoticeable and

harmless galvanic current. A third group used both the fluoride dentifrice and the modified toothbrush, while the control group received only inactive products.

A thermoelectric probe delivered increases or decreases of heat one degree at a time at the gum line of sensitive teeth, and patients indicated when pain was felt.

Fluoride treatment alone was not significantly desensitizing, but the electric current, with or without fluoride, markedly reduced sensitivity to cold.

Heat sensitivity, which affects fewer people than cold, was also reduced but not as much.

Within a month, nearly 70 per cent of those using the special brush with ordinary paste improved and almost 40 per cent claimed complete cure.

Scientists will test anticariogenic effect of sealant and fluoride gel

Scientists of the US Department of Health, Education and Welfare (HEW) are planning a study to test the combined effect of two measures for improving caries prevention in children. They will paint a sealant on to the occlusal surfaces of children's molars and bicuspid and will have the same children apply a fluoride gel to their teeth.

It is the first time that the sealant and fluoride gel have been tested together. Both measures can be applied by trained auxiliaries, says an HEW spokesman. Therefore, if combined treatments prove more effective and economical than one alone, these procedures may permit dentists to diagnose and treat more patients effectively.

As a first step, all decayed teeth will be restored in 800 grade 5 and 6 children. Then 400 children will have a bisphenol A-glycidyl methacrylate-methyl methacrylate sealant painted on to the occlusal surfaces of their molars and bicuspid. The coating will be polymerized by brief exposure to ultraviolet light. The same children will then use an acidulated phosphate fluoride gel for 10 minutes every day for 10 consecutive school days. At the yearly checkups, the sealant will be re-applied if it has worn off and will be applied to newly erupted teeth.

The remaining 400 children will be compared for tooth decay rates, the

number of teeth restored, and the cost of treatment. Results should show how greatly the preventives improve oral health and whether there is a dollar saving in dental care costs for children receiving the sealant and fluoride gel.

Root decay more extensive than thought

Dental surveys by a Temple University scientist have shown that more people have decay on tooth roots, a problem that is difficult to diagnose and treat, than was previously realized. About 40 per cent of persons examined by S. T. Hazen, Philadelphia, had at least one tooth with root decay. His study showed that this type of decay becomes more prevalent with advancing age as gums recede, exposing roots to decay-causing plaque.

In one group of 500 employees of an insurance company, 60 per cent in the 50-59 year age group had at least one root cavity, and in the over-60 group the figure rose to 70 per cent. Root decay was found in 46 per cent of the 40-49 year olds; in 26 per cent of the 30-39 group and in 13 per cent of the 20-29 age group.

Dr. Hazen noted that many lesions found on the roots during clinical examinations were not detected by X-rays because root decay often develops on labial, buccal and lingual surfaces.

Restoring root decay can also be difficult, especially on interproximal surfaces. Dr. Hazen is therefore seeking ways of preventing the decay from developing. One possibility is to develop agents to control the development of dental plaque, he added.

Fluoride deprivation and dental neglect endanger children with heart defects

Research by a University of British Columbia dental scientist working in Boston shows that children with congenital heart defects often have poor oral health and suffer from dental diseases caused by neglect which could complicate their heart problems further. S. L. Khanna, assistant professor of restora-

tive dentistry at UBC, and L. T. Swanson, Boston, reported their findings from 68 congenital heart defect patients at the Boston Children's Hospital. The study was part of a larger project to measure the adaptation of young cardiac patients to society.

Caries, periodontal disease and other oral infections can trigger bacteraemias which in turn can cause subacute bacterial endocarditis, especially in hearts that are already defective. Yet Doctors Khanna and Swanson found that the young cardiac patients in the study had poor oral health and more than 60 per cent were not receiving regular dental check-ups or treatment. Every child had gingivitis. One eight year old, the youngest, had caries in 25 per cent of his teeth — and that percentage rose with the age of the children in the study. None of the children had received fluoride supplements; Boston water is not fluoridated.

Research zeroes in on substitute for sucrose

As part of an intensive attack on tooth decay, the US Department of Health, Education and Welfare's National Institute of Dental Research is supporting efforts to find a palatable, harmless substitute for sucrose in snack foods and desserts. Sucrose has long been acknowledged as a chief contributor to decay because it is an ideal nutrient for caries-promoting bacteria.

Popular snack foods which have been modified by substituting other carbohydrates for the usual sugar will be studied by investigators under the direction of Dr. Juan Navia, professor of dentistry at the University of Alabama School of Dentistry in Birmingham.

The foods will first be tested on rats which have been trained to human eating habits — three meals a day with snacks three or four times in between. After 40 days the rats will be examined for tooth decay and results will be compared with a control group of animals. If the results are satisfactory clinical studies will be scheduled.

The focus on sugar substitutes is one of several efforts being made by the National Institute of Dental Research to curb tooth decay. Other approaches include bacterial control and fluoride protection.

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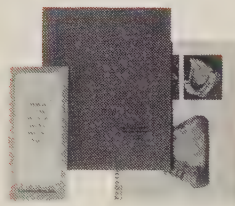
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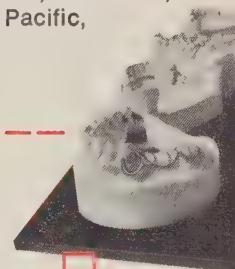
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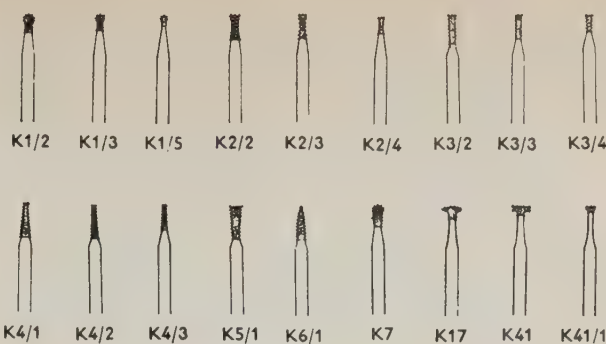
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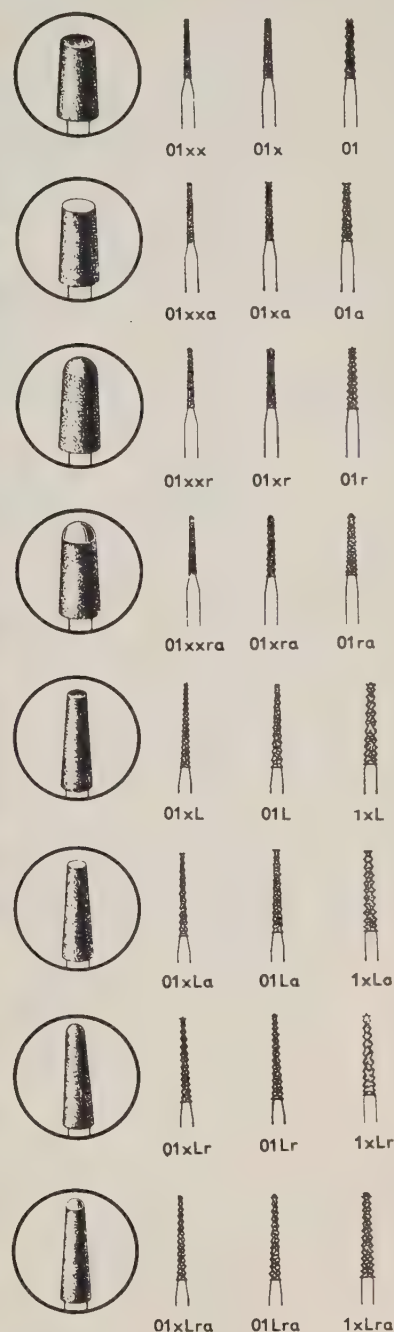


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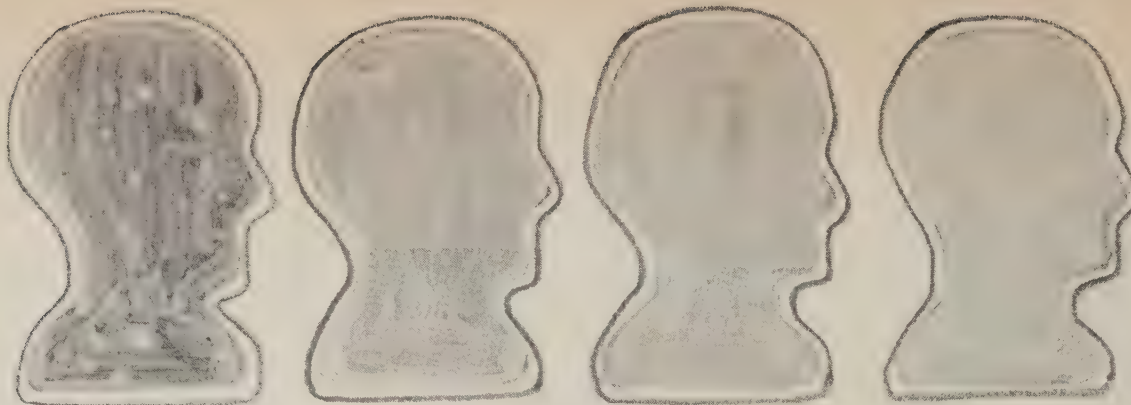
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Les actualités dentaires

Le Canada

Modification du projet de loi sur la denturologie

Les techniciens dentaires demeurent comme profession à titre réservé

La nouvelle version du projet de loi sur la denturologie maintient le principe de la reconnaissance de la denturologie comme profession d'exercice exclusif au Québec.

Toutefois, le nouveau projet prévoit que l'essai, la pose, l'adaptation, le remplacement, ou la vente de prothèses dentaires amovibles qui nécessitent la prise d'empreintes ou d'articulés, ne pourront se faire qu'en exécution d'une ordonnance d'un dentiste.

Cette disposition contenue dans la nouvelle version du projet de loi sur la denturologie précise cependant qu'il sera permis aux denturologistes de réparer ou de remplacer une prothèse dentaire amovible sans obtenir au préalable une nouvelle ordonnance, lorsque la prise d'empreintes ou d'articulés ne sera pas requise.

Techniciens dentaires: profession à titre réservé

Jusqu'à présent, au Québec, en vertu des lois sur les dentistes et les techniciens dentaires, ces derniers déterminaient avec les premiers le monopole de la fabrication et de la réparation de prothèses dentaires amovibles. La nouvelle version des projets de loi déposés aujourd'hui maintient la position prise dans les projets déposés à l'automne 1971 qui a pour effet d'ouvrir à quiconque le champ de la fabrication de prothèses dentaires amovibles.

La profession de technicien dentaire sera dorénavant incluse dans le Code des professions dans la catégorie des

professions à titre réservé. Les membres actuels de l'Association des techniciens dentaires de la province de Québec auront deux choix: ils pourront se qualifier comme denturologistes en vertu des dispositions de la Loi sur la denturologie permettant au bureau provisoire de cette corporation de délivrer des permis aux techniciens dentaires s'ils sont membres en règle de l'association au moment de l'entrée en vigueur de la loi et s'ils ont subi avec succès les examens requis par ce bureau; ils pourront aussi demeurer membres de la corporation des techniciens dentaires qui sera régie par le Code des professions et continueront ainsi à oeuvrer dans le domaine de la fabrication des prothèses dentaires amovibles, concurremment, cependant, sauf le titre, avec toute autre personne.

Modification au champ de pratique des dentistes

Par ailleurs, la nouvelle version du projet de loi sur les dentistes (numéro 254) apporte une modification à la définition de l'exercice de l'art dentaire. Elle substitue dans la définition du champ de pratique les termes "toute déficience des dents" à celui "les maladies des dents", ceci afin de rendre la définition moins limitative.

Le gouvernement sera parcimonieux dans la création de professions d'exercice exclusif

Le code des professions (bill 250), proposé par le ministre des Affaires sociales du Québec, établit la protection du public comme motif déterminant de la formation de groupements de personnes en corporations professionnelles. Cependant, ce critère doit, dans chaque cas, être appliqué en

tenant compte notamment de l'ensemble des facteurs suivants:

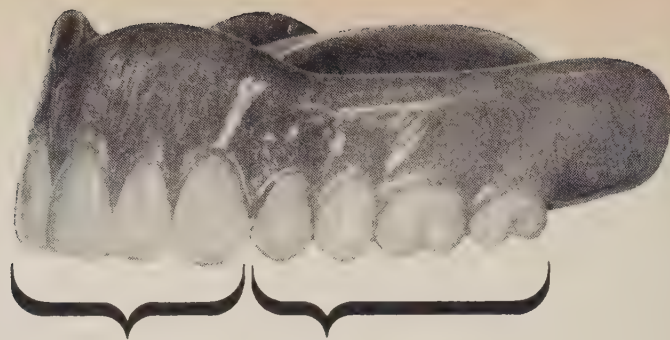
- Le niveau de connaissances requises des membres de la future corporation dans l'exercice de leurs activités;
- Le degré d'autonomie de ces personnes dans leur travail;
- La difficulté de porter un jugement sur de telles activités par les personnes qui n'ont pas une formation et une qualification semblables;
- La confiance que le public doit témoigner à ces personnes par le fait notamment qu'elles dispensent des soins ou qu'elles administrent des biens;
- La nature personnelle du rapport entre ces personnes et les gens qui recourent à leurs services et le caractère confidentiel de leurs communications;
- La gravité du préjudice ou des dommages que le public peut encourir par suite de l'absence d'un contrôle adéquat de l'intégrité ou de la compétence de ces personnes.

Titre réservé et exercice exclusif

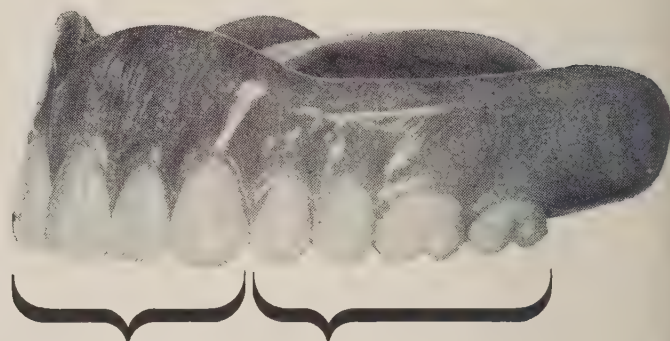
Par ailleurs, le projet de Code des professions prévoit qu'un groupement de personnes qui, selon le gouvernement, satisfait à l'ensemble des facteurs mentionnés précédemment, peut se voir constitué soit en profession d'exercice exclusif, soit en profession à titre réservé. Dans le premier cas, la présentation d'un projet de loi spécial à l'Assemblée nationale sera nécessaire; dans le second cas, le gouvernement délivrera des lettres patentes en vertu du Code des professions.

Selon le gouvernement, la constitution d'un groupement en profession d'exercice exclusif doit se faire uniquement lorsque la protection du public exige d'une façon absolue que les actes posés par les personnes membres de ce groupement leur soient réservés en toute exclusivité. Dans un tel cas, il faut évidemment pouvoir décrire avec précision la nature des actes posés par les membres du groupement en cause.

Cette parcimonie dont le gouvernement désire faire preuve dans la création de professions d'exercice exclusif, vient du fait qu'une délimitation trop rigide des champs de pratique, à une époque donnée, par le mécanisme d'une loi, risque de créer un monde compartimenté dans des secteurs souvent complémentaires qui exigent un travail d'équipe. De plus, une telle situation



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engendre souvent de nombreux conflits entre professionnels, freine l'évolution dynamique de ces professions et en définitive n'est guère favorable à l'obtention par le public de services adéquats.

Aussi, à chaque fois où cela lui apparaîtra possible, le gouvernement entend-il octroyer un titre réservé, plutôt qu'un monopole d'exercice, aux groupements dont il jugera nécessaire la formation en corporation professionnelle. L'octroi d'un titre réservé signifie que seuls les membres de la corporation peuvent porter le titre en question, mais laisse ouvert l'accomplissement des actes à toute personne qui le désire. Au fond, le titre constitue alors pour le public un gage de formation suffisante et de compétence.

Application au domaine de la santé

Le domaine de la santé illustre mieux que tout autre les dangers qu'il y a à circonscrire l'exercice d'une profession dans une définition figée par voie législative. Les travaux de la Commission parlementaire qui a étudié toute la législation sur les professions ont révélé avec éclat l'intérêt de ne pas multiplier les professions d'exercice exclusif dans ce domaine.

Le secteur de la réadaptation, en particulier, démontre bien cet impératif. Aussi le gouvernement a-t-il décidé de reconnaître la physiothérapie, l'ergothérapie de même que l'orthophonie et l'audiologie comme professions à titre réservé seulement. Le chevauchement des diverses disciplines dans ce secteur qui est en pleine évolution s'accommoderait mal en effet de définitions précises de champs d'exercice qui seraient réservés en exclusivité à une profession. Également, il faut éviter de rendre illégal l'exercice de certaines disciplines qui ont une fonction utile dans ce secteur, telle la rééducation physique, par exemple.

Dans d'autres secteurs enfin, il s'avère tout simplement fort difficile de définir un champ d'activités professionnelles de façon suffisamment précise pour le réserver de façon exclusive aux membres d'un groupement donné. C'est le cas par exemple des infirmières auxiliaires. Le gouvernement estime cependant qu'il est important de les reconnaître comme professions à titre réservé.

L'économie

Prohibition des conflits d'intérêts chez certaines professions du Québec

Les nouveaux projets de loi touchant le domaine des professions de la santé comportent des changements importants par rapport aux projets déposés au cours des mois de novembre et décembre 1971, relativement aux dispositions visant à éliminer les conflits entre l'intérêt personnel des professionnels et l'intérêt public.

Les premiers projets comportaient une disposition à peu près uniforme dans toutes les lois pertinentes prohibant aux membres des professions en cause d'avoir un intérêt dans une entreprise de fabrication de prothèses ou de médicaments qu'ils peuvent être appelés à prescrire ou, tout simplement, à distribuer directement au public. Les nouveaux projets tiennent compte des exigences propres à chaque profession et du rôle particulier des membres de certaines professions vis-à-vis le public.

Adaptation des dispositions à chaque cas particulier

Dans les nouveaux projets de loi déposés, le gouvernement a maintenu l'interdiction, pour les professionnels qui sont appelés à prescrire des prothèses ou des médicaments, d'avoir un intérêt dans une entreprise de fabrication de tels prothèses ou médicaments.

Toutefois, certaines adaptations ont été faites selon les professions en cause. Ainsi, si le projet de loi médicale interdit toujours à un médecin d'avoir un intérêt dans une entreprise de fabrication de quelque prothèse que ce soit, cette prohibition ne s'applique plus aux médicaments parce que le projet de loi de pharmacie reconnaît aux pharmaciens le pouvoir de substituer aux médicaments prescrits un médicament équivalent: ce qui élimine pour le médecin le risque de conflits d'intérêts.

Par ailleurs, le projet de loi de pharmacie prévoit qu'un pharmacien ne pourra pas à son tour substituer un médicament à un autre qui serait fabriqué par une entreprise dans laquelle il

a des intérêts. La suppression dans le projet de loi de pharmacie d'une prohibition plus générale a le mérite de tenir compte des cas où la question du conflit d'intérêts peut vraiment se poser, permettant ainsi aux pharmaciens d'industrie de ne pas se trouver dans une situation intenable.

La prohibition des conflits d'intérêts s'applique également aux dentistes, aux optométristes et aux podiatres. Toutefois, les nouveaux projets prévoient qu'un dentiste pourra avoir un technicien dentaire à son emploi sans qu'il soit considéré posséder un intérêt dans une entreprise de fabrication de prothèses dentaires.

Relativement aux optométristes qui ont un intérêt dans une entreprise de fabrication de lentilles ophtalmiques au moment du dépôt des projets de loi, il est prévu qu'ils conserveront leurs droits acquis à cet égard. Pour l'avenir la possession de tels intérêts sera cependant prohibée. Un tel adoucissement à la disposition antérieurement proposée permettra à certaines entreprises de fabrication de lentilles ophtalmiques dont presque tous les actionnaires sont des optométristes de continuer à opérer.

Enfin, en ce qui a trait aux denturologistes, la prohibition a été supprimée dans les nouveaux projets de loi par suite des modifications qu'ils apportent à la définition du champ d'exercice de cette profession.

Modifications mineures apportées à l'utilisation des médicaments en prothèses

Plusieurs modifications mineures ont été apportées relativement à l'utilisation des médicaments et des prothèses dans les nouveaux projets de loi soumis à l'Assemblée nationale du Québec.

Ainsi, le projet de loi médicale déposé à l'automne 1971, comportait des termes qui auraient pu permettre une interprétation erronée quant au droit par les médecins de tenir une pharmacie. En effet, les dispositions de ce projet permettaient aux médecins "de tenir ou fournir" à leurs patients les médicaments, substances et appareils nécessaires, alors que l'intention du législateur était plutôt d'en "permettre l'utilisation".

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⁽¹⁾ Wade, A. B.,
British Medical Journal,
Volume III, Number 8,
P. 280-285, 17/10/61.

Dental Division,
COOPER LABORATORIES LIMITED
Ste. Thérèse, Qué.

Par conséquent, la nouvelle version des projets de loi médicale et de loi sur les dentistes prévoient que tout médecin ou dentiste est autorisé à utiliser les médicaments, les substances et les appareils dont il peut avoir besoin dans l'exercice de sa profession de même qu'à administrer et prescrire des médicaments à ses patients. Il n'est plus question cependant que le médecin soit habilité à "tenir et fournir" des médicaments à ses patients, ce qui évidemment est réservé de façon très générale aux pharmaciens en vertu de la Loi sur la pharmacie.

Uniformisation de la terminologie relative aux prothèses

Les audiences en commission parlementaire ont relevé un certain manque d'uniformité dans les termes utilisés dans les divers projets de loi déposés devant l'Assemblée nationale à l'automne 1971 relativement à la définition des champs de pratique des professionnels qui distribuent directement au public ou sur ordonnance des prothèses dentaires, optiques et auditives.

La nouvelle version de ces projets déposés aujourd'hui par le ministre des Affaires sociales comportent des dispositions qui uniformisent les termes utilisés à cet égard dans la définition du champ de pratique des dentistes, optométristes, denturologistes, opticiens d'ordonnances et acousticiens en prothèses auditives. Ceci vise à éliminer toute possibilité de conflit dans l'interprétation de ces dispositions.

Assouplissement sensible du caractère d'exclusivité du champ de pratique de certaines professions au Québec

Plusieurs projets de loi comportent une disposition visant à assouplir les effets du caractère d'exclusivité des actes accomplis par les membres de certaines professions dans le domaine de la santé. Il s'agit des projets de loi qui visent les professionnels suivants: médecins, dentistes, pharmaciens, infirmières et infirmiers.

Ces projets comportent tous une disposition permettant au bureau de la corporation professionnelle en cause d'adopter un règlement déterminant, parmi les actes qui sont réservés en

exclusivité à leurs membres, ceux qui, suivant certaines conditions prescrites, peuvent être posés par des classes de personnes autres que les membres de la corporation.

Ce règlement devra être adopté à l'intérieur d'un délai fixé par l'Office des professions et après que le Bureau aura consulté la corporation professionnelle visée, s'il y a lieu, ou encore les organismes les plus représentatifs de ces classes de personnes. Si cette modalité ne permet pas l'adoption du règlement dans le délai fixé, le projet de Code des professions prévoit que l'Office adoptera alors lui-même le règlement.

Avantages de la délégation de certains actes

Les débats devant la Commission parlementaire sur les professions ont révélé que la rigidité des champs de pratique, notamment dans le domaine de la santé, constitue l'un des problèmes majeurs à l'évolution dynamique de la dispensation des services professionnels. Le gouvernement croit donc qu'une des meilleures façons de réconcilier la nécessité de fermer, pour la protection du public, certains champs d'activités avec les impératifs de l'évolution des professions, consiste à introduire dans la loi constitutive de plusieurs de ces professions une disposition permettant la délégation de certains actes à des classes de personnes autres que les membres de ces professions.

Cette clause de délégation aura pour effet de répondre à certaines réalités concrètes. Par exemple, dans la Loi médicale, cette clause permettra aux infirmières et infirmiers d'agir dans la légalité, alors que depuis plusieurs années ces personnes sont appelées, particulièrement en milieu hospitalier, à dispenser des soins qui normalement devraient l'être par un médecin. Il en sera de même pour les infirmières et infirmiers auxiliaires par rapport aux infirmières et infirmiers. Un règlement du bureau de la corporation professionnelle des infirmières et infirmiers pourra permettre une délégation d'actes en faveur des auxiliaires. Le même principe sera appliqué dans le projet de loi des dentistes et le projet de loi des pharmacies, permettant ainsi de déléguer des actes à du personnel auxiliaire comme, par exemple, aux hygiénistes-dentaires et aux aide-pharmaciens.

Au Québec - Inclusion de la fonction de prévention dans le champ de pratique de plusieurs professions

Les moyens pour promouvoir la prévention de la maladie font l'objet d'une disposition spéciale dans plusieurs des projets de loi concernant les professions de la santé.

Une telle disposition fait suite aux nombreuses représentations faites par divers organismes à la commission parlementaire sur les professions. En introduisant ce type de disposition dans les nouveaux projets, le gouvernement a bien pris soin cependant de ne pas réserver en exclusivité les actes visant la prévention et sa promotion aux seuls membres des professions en cause. Il importe en effet que toute personne puisse s'adonner à des mesures de prévention et, il serait tragique d'en conférer le monopole à certains groupes seulement.

Les projets de loi, où une telle disposition relative à la prévention et à sa promotion est maintenant incluse, sont les suivants: Loi médicale (numéro 252), Loi des dentistes (numéro 254), Loi sur la pharmacie (numéro 255), Loi sur l'optométrie (numéro 256), Loi sur la chiropraxie (numéro 269), Loi sur la podiatrie (numéro 271), Loi sur les infirmières et infirmiers (numéro 273).

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 décembre 1972:

Fonds avec garantie \$10.003;

Fonds à revenu fixe \$13.699;

Fonds d'actions ordinaires \$31.443.

L'avoir total (valeur marchande) du régime se montait à \$14.745,148.62.

Au cours du mois précédent, les transactions ont été les suivantes: achat 5,000 Royal Trust GIR et 100 actions de Fields Stores.

Pour de plus amples renseignements, veuillez écrire à: CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

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Il est absolument essentiel qu'un FONDS DE CAPITAL qui fournisse un revenu annuel de base suffisant soit créé pour que nous puissions appuyer directement l'avancement de l'art dentaire, la formation de professeurs et chercheurs, l'enseignement bucco-dentaire et les programmes dentaires des dix facultés canadiennes.

L'entreprise persuasive de toutes les personnes ayant embrassé la profession dentaire entraîne une appréciation et une attitude favorables du grand public.

L'Association vous invite à considérer très sérieusement l'avenir de l'art dentaire, son indépendance, son prestige, ses progrès scientifiques . . . vous voudrez alors donner généreusement au FONDS DE CAPITAL du FONDS CANADIEN POUR L'ENSEIGNEMENT DENTAIRE.

VOUS Y GAGNEZ . . . tous les membres de la profession dentaire bénéficient de la création d'un gros fonds de capital sous les auspices du FCED. Toutes les contributions de capital seront soigneusement investies sous le contrôle avisé du Conseil des Fiduciaires, en obligations, titres de rente et obligations hypothécaires qualifiant pour les fonds d'oeuvres de charité.

L'art et la pratique dentaire canadiennes sont reconnus dans le monde entier. Un fonds de capital d'un million de dollars assurera un appui continu de l'enseignement pour l'avancement de l'art dentaire, les recherches et avantages professionnels partagés.

Prenez part à l'essor de la profession que vous avez choisie. Nous devons faire appel à tous les dentistes sans exception, et ceci dans toutes les provinces, pour arriver à cet objectif.

CETTE ANNÉE, SOYEZ PLUS GÉNÉREUX QUE JAMAIS *

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It is essential that a proper CAPITAL FUND be created to provide a sizeable, basic yearly income for our direct support of advanced dental training for prospective dental teachers and researchers, oral health education, and Canadian dental projects in Canada's ten dental schools.

Aggressive action by every member of the dental profession toward the beneficial advancement of dental science in Canada, is a most important contribution to favourable public appreciation and attitude.

Your Association asks that you think vigorously for the future of dentistry, its independence, its prestige, its scientific advancement . . . and at this time especially . . . give generously to the CAPITAL FUND of the CANADIAN FUND FOR DENTAL EDUCATION.

YOU GAIN . . . every member of the dental profession gains with the creation of an important capital fund through your CFDE. All Capital contributions are invested under the careful supervision of the Board of Trustees in debentures, bonds and mortgages that properly qualify for charitable trust funds.

Canadian dental science and practice leads in world recognition. A million dollar capital fund will insure great continuity to our future support of advanced training in dental education; research; and shared professional advantages.

Participate in the continual development of your chosen profession. Every dentist in every province is asked to help gain this goal.

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Déclaration d'impôt fédéral des dentistes

Revenu

A compter de 1972, les contribuables exerçant une profession doivent calculer leur revenu sur une base cumulative. La méthode cumulative exige que les contribuables incluent les comptes à percevoir et ceux des traitements en cours dans leurs revenus à la fin de chaque exercice financier, et en déduisent le montant des comptes à payer. Ces dispositions permettent aussi au contribuable d'omettre le travail en cours et dans ce cas d'omettre aussi de consigner les détails de cet article. Quand le contribuable a déterminé son choix, il est de ce fait contraint d'adopter la même modalité pour les années subséquentes. Ce choix ne peut être révoqué sans l'assentiment du ministre du Revenu national.

Conséquemment, il importe de comptabiliser tous les honoraires facturés. Un montant est considéré effet à recevoir à compter du jour le plus rapproché de celui:

1. où le compte est présenté,
2. où le compte aurait été présenté sans le retard occasionné par des événements indus,
3. où le contribuable a reçu ses honoraires.

Le contribuable dont le revenu provient de l'exercice d'une profession doit inclure les comptes d'effets à recevoir de 1971 dans son revenu de 1972. Toutefois, il a le privilège de déduire de ce montant une "réserve" conforme à des limites déterminées. Cette réserve sera subordonnée à la valeur du placement que le contribuable investit dans ses affaires professionnelles et permet à la majorité des contribuables de retarder le règlement des charges fiscales sur ces effets à recevoir pour 1971. En 1972, on considère la valeur du placement d'un propriétaire (par opposition à celle d'un associé) dans une affaire professionnelle, comme le montant de ses comptes d'effets à recevoir à la fin de l'année financière moins toute déduction consentie pour les créances douteuses. Après 1972, pour chaque année subséquente, le contribuable inclura dans son revenu la réserve de l'année précédente et effectuera le calcul de la nouvelle réserve appropriée comportant

les effets à recevoir à la fin d'une année particulière, moins les dédommagements prévus pour les créances douteuses. Certaines règles spéciales régissent le calcul de la valeur de placement d'un associé, et le professionnel qui exerce sa profession en groupe devrait solliciter sur le sujet l'avis d'un conseiller compétent.

Les gains en capital

Les dispositions de la Loi de l'impôt sur le revenu prévoient que le contribuable, après 1971, devra inclure dans son revenu l'excédent des gains en capital sur les pertes en capital permises. Les gains en capital équivalent à la moitié des gains en capital réalisés sur la vente d'une propriété. La perte en capital allouée équivaut à la moitié de la perte réelle en capital. Règle générale, la propriété habitée par le dentiste est exempte d'impôt sur tout gain en capital. Quand la propriété domiciliaire sert aussi à des fins d'affaires (voir article (g) sous la rubrique Dépenses) le gain en capital réalisé sur la vente d'une propriété peut être imposable et, dans ce cas, le contribuable peut réclamer le remboursement de la dépréciation appropriée.

Chaque membre de la profession dentaire devra tenir un registre précis du revenu reçu sous forme d'effets à recevoir ou de sommes au comptant provenant de l'exercice de sa profession (honoraires) ou d'autres sources (placements, location de bien immeubles, etc.). Les écritures de ce registre devront être claires et facilement contrôlables en regard de la déclaration de son revenu. Les écritures doivent être consignées dans des registres destinés à cette fin et ces derniers ne peuvent être détruits sans le consentement écrit du ministre du Revenu national.

Dépenses

Les montants déductibles du revenu comprennent les frais encourus et accumulés au cours de l'année, y compris les effets à recevoir à la fin de

l'année. La méthode cumulative de déclaration du revenu comporte tous les effets à recevoir à la fin de l'année mais prévoit aussi la déduction de tous les effets à payer. Selon les explications ci-après, l'enregistrement comptable des dépenses doit être mis à jour afin d'inclure tous les effets à recevoir y compris ceux qui n'ont pas été encaissés à la fin de l'année. Les effets à payer, non réglés à la fin de l'année 1971 pour des dépenses non encourues dans le cours de cette année particulière ou d'une année antérieure, peuvent être déduits en totalité dans le calcul du revenu de 1972.

Sous la rubrique dépenses, les comptes suivants doivent être inscrits dans le registre et les pièces justificatives doivent être disponibles pour le contrôle des déductions réclamées:

(a) les fournitures dentaires ou fournitures similaires;

(b) le personnel de bureau, le personnel infirmier, le personnel comptable ainsi que les frais de blanchissage et les primes d'assurance prévues pour les fautes professionnelles.

Les sommes versées sous forme de salaire doivent être déclarées sur la feuille d'imposition T4 - T4A sommaire et T4 supplémentaire disponible au bureau de l'impôt de votre district. (La Loi de l'impôt sur le revenu interdit toute déduction de salaire versée par l'époux à son épouse ou vice-versa. Quand des montants de ce genre ont été versés, ils doivent être ajoutés au revenu du contribuable;

(c) les frais du service téléphonique encourus aux fins de l'exercice de la profession;

(d) les honoraires des assistants:

Les noms et adresses des assistants auxquels ces honoraires ont été versés, ainsi que le montant de ces honoraires, doivent être déclarés le ou avant le dernier jour de février de chaque année sur les feuilles d'imposition T4 - T4A sommaire et T4 supplémentaire (ne pas confondre avec la feuille d'imposition individuelle T1, à remplir le ou avant le 30 avril de chaque année);

(e) loyers versés:

Déclarer le nom et l'adresse du propriétaire (de préférence) ou l'agent immobilier concerné (voir (g)). L'impôt réclamé des non-résidents doit être retenu à la source et déduit du loyer versé aux propriétaires non-résidents des immeubles loués;

(f) les frais de papeterie et d'affranchissement postal;

(g) les dépenses proportionnelles encourues par les dentistes exerçant leur profession à domicile (voir aussi précédemment: gains en capital):

1. Immeuble appartenant au dentiste: le dentiste exerce sa profession dans un immeuble qui lui appartient et dans lequel il a élu domicile. La loi prévoit dans ce cas une allocation proportionnelle pour les frais d'entretien des laboratoires, des

bureaux et de la salle d'attente, basée sur la proportion de la surface totale de l'immeuble occupé par les locaux réservés à ces fins. Les déductions admises comprennent les taxes, les frais d'éclairage, de chauffage, d'assurance, de réparations et d'entretien ainsi que les intérêts sur l'hypothèque (le nom et l'adresse du créancier hypothécaire doivent être déclarés). Note: concernant la dépréciation, voir l'article (m).

2. Locaux loués par le dentiste: le montant du loyer et les autres frais d'entretien payés par le dentiste seront répartis suivant les modalités décrites précédemment;

(h) frais divers (non classifiés autrement):

Les frais imputés à cet article doivent pouvoir subir l'analyse et se justifier par l'existence de pièces appropriées. Les exemptions réclamées pour les dons de charité se limitent à 20 pour cent du revenu net provenant de toutes sources, sur présentation de reçus à votre bureau de district de l'impôt. Les dons de charité consentis dans l'exercice de la profession sont exclus des frais d'ordre professionnel et réclamés généralement sous forme de déduction du revenu avec tout autre don versé en d'autres circonstances.

Les cotisations annuelles versées aux organismes qui octroient le droit de pratique et aux associations professionnelles, lorsque dûment déclarées dans le rapport d'impôt, sont considérées comme frais déductibles. A compter de 1965 et pour les années subséquentes, les frais de scolarité versés à une institution d'enseignement au Canada pour un cours postsecondaire sont déductibles. Toutefois, aucune déduction n'est consentie pour les frais de transport et de séjour en rapport avec ces cours;

(i) les intérêts sur un emprunt peuvent être débités au revenu professionnel quand l'emprunt a été effectué à des fins professionnelles. Lorsque l'emprunt est effectué à des fins de placement, les intérêts doivent être débités au revenu provenant du placement. Si l'emprunt est effectué à des fins personnelles, aucune déduction n'est consentie sur le revenu pour les intérêts déboursés;

(j) la taxe d'affaires est déductible à l'article des frais mais les impositions fiscales ne sont pas déductibles;

(k) les frais encourus pour l'usage de l'automobile:

Les frais de déplacement en taxi et en automobile, entraînés pour acquérir un revenu provenant de l'exercice de la profession dentaire, seront acceptés quand le dentiste doit visiter des patients à domicile. Toutefois, les frais de déplacement entre le domicile du dentiste et son bureau ne sont pas déductibles du revenu. (Le calcul des réclamations pour les frais d'automobile est expliqué dans le bulletin de renseignements no 28, publié par la

division de l'impôt du département du Revenu national et réimprimé en partie aux pages 209-210 du numéro de mars 1965 du Journal);

(l) les cotisations à des clubs sociaux acquittées ou encourues après 1971 ne sont plus déductibles. "La cotisation à un club social" signifie l'adhésion ou la cotisation initiale à tout club dont l'objet principal consiste à fournir aux membres des repas et des facilités pour la récréation et la pratique des sports. De plus, les frais encourus par le contribuable après 1971 pour l'usage ou l'entretien de toute propriété comportant un yacht, un camp, un chalet ou un terrain de golf ne sont plus admissibles;

(m) provision pour l'amortissement de la mise de fonds (dépréciation):

La méthode adoptée pour le calcul de la provision concernant les frais d'amortissement de la mise de fonds à des fins fiscales est essentiellement la même que celle de l'an dernier. Toutefois, de nouvelles restrictions imposées pour 1972 limitent les réclamations des provisions pour l'amortissement de la mise de fonds uniquement au revenu provenant de la location d'immeubles.

On obtiendra des renseignements supplémentaires à ce sujet en consultant les règlements ou votre bureau de district de l'impôt.

Frais de congrès

Les dépenses de congrès peuvent être déduites par les personnes exerçant une profession, mais la déduction doit se limiter à un maximum de deux congrès au cours de l'année fiscale. De plus, l'assistance du contribuable à un congrès doit être justifiée par des raisons d'ordre professionnel. Les frais encourus seront admissibles s'ils sont raisonnables et le contribuable devra fournir les renseignements suivants:

1. les dates auxquelles le congrès a eu lieu et l'endroit de la réunion;

2. la durée en jours de sa présence au congrès, justifiée par une déclaration de l'organisme responsable certifiant la présence du contribuable; et

3. les frais encourus pour ce séjour en groupe: (a) frais de déplacement, (b) repas et frais de séjour à l'hôtel pour lesquels le contribuable doit produire au moins des pièces justificatives disponibles à des fins d'inspection éventuelle.

Tous les frais encourus à des fins personnelles y compris ceux qui résultent de la présence de l'épouse (ou de l'époux) du contribuable qui l'accompagne au congrès ne sont pas inclus dans les considérations précédentes. Aucun frais de congrès n'est déductible du revenu provenant du traitement.

Le siège du congrès doit être conforme à l'envergure (territoriale) de l'organisation en cause.

Les frais encourus pour assister au congrès d'un organisme canadien tenu à l'extérieur de ces limites géographiques ne sont pas déductibles dans le calcul du revenu. Dans le même ordre d'idées, le siège d'un congrès tenu au cours d'une croisière océanique est considéré comme situé à l'extérieur du Canada.

Programmes enregistrés d'épargne-retraite

Les déductions réclamées en rapport avec la contribution à un programme d'épargne-retraite sont limitées:

(a) dans le cas d'un employé salarié bénéficiant de la protection d'un plan enregistré de caisse de retraite (qu'il contribue ou non à la caisse de retraite), une déduction jusqu'à concurrence de \$2,500 ou 20 pour cent de son revenu salarial, déduit du montant, en autant qu'il existe, qu'il est en droit de déduire de son revenu à titre de contribution versée à une caisse de retraite;

(b) dans les autres cas, le moindre de \$4,000 ou 20 pour cent de son revenu salarial. "Le revenu salarial" comprend généralement le revenu reçu sous forme de salaire (avant toute déduction en rapport avec une caisse de retraite) ou le revenu provenant d'une entreprise commerciale ou de l'exercice d'une profession, plus le revenu net provenant d'encaissements sous forme de loyer.

Les montants déductibles comprennent ceux qui ont été versés en 1972 et moins de 60 jours après la fin de l'année. Les versements effectués en janvier ou en février 1972 ne peuvent être réclamés en 1972 quand ils auraient pu être déduits en 1971.

Les personnes qui désirent établir l'acceptabilité d'un plan proposé ou en existence doivent s'adresser à l'organisme qui offre le plan. Il est normal que l'organisme en question ait la responsabilité d'expliquer le plan et prenne les mesures nécessaires pour obtenir l'enregistrement de ce dernier.

Les dentistes qui ont sollicité l'adhésion au programme d'épargne-retraite de l'Association dentaire canadienne avant le 28 février 1973 sont assurés que leurs noms sont enregistrés à titre de participant à un plan enregistré d'épargne-retraite et que leurs contributions sont déductibles pour l'année fiscale 1972. Le registre d'inscription pour l'adhésion au programme permettant de déduire les contributions pour l'année 1972 sera clos le 28 février 1973.

Un relevé de compte personnel et un reçu attestant le montant de la contribution seront adressés à chaque adhérent en mars 1973 afin de justifier les réclamations portées sur la déclaration d'impôt 1972.

Les membres sollicitant leur adhésion au CDARSP après le 28 février 1973 pourront bénéficier d'une remise fiscale pour l'année 1973.

Obligations fiscales

Les personnes dont plus de 25 pour cent du revenu provient de sources autres que le salaire et le traitement doivent verser l'impôt réclamé pour chaque année en quatre versements partiels aux dates suivantes: le 31 mars, le 30 juin, le 30 septembre et le 31 décembre.

Dentistes rémunérés par traitement contractuel

La Loi de l'impôt sur le revenu prévoit la déduction de certains frais du revenu salarial.

Les frais déductibles comprennent les frais de déplacement, les cotisations aux organismes professionnels, le loyer du bureau, le traitement versé à un assistant ou à un suppléant ainsi que les fournitures utilisées directement pour satisfaire aux obligations de l'emploi.

Pour 1972, la loi accorde aussi des frais déductibles à l'employé équivalant au moindre de \$150 ou de 3 pour cent du revenu provenant de l'emploi.

Toutefois les frais déductibles au bénéfice de l'employé sont soumis à certaines dispositions. Sans les citer en détail, en voici les points principaux:

(a) les frais doivent avoir été encourus en rapport avec l'exécution des obligations du bureau ou des exigences de l'emploi;

(b) que l'employé soit tenu, en vertu des clauses du contrat de travail, d'acquitter personnellement ces frais;

(c) la déduction des frais de déplacement exige que l'employé soit habituellement obligé de remplir les obligations de son emploi à l'extérieur du bureau de son employeur. Les frais de déplacement du domicile du dentiste à son bureau ne sont pas compris dans ces réclamations.

Les revenus en participation

Comme par le passé, les revenus en participation seront imposables aux associés. Toutefois, plusieurs caractéristiques nouvelles entrent en ligne de compte pour déterminer le revenu au niveau de la participation, telles les provisions pour les frais d'amortissement de la mise de fond, la dépréciation des immeubles détenus en participation, la vente des intérêts d'un associé, le traitement des effets à recevoir pour 1971, etc. A ce sujet, les membres doivent consulter des conseillers professionnels avant de mettre la dernière main au calcul du revenu en participation ou encore consulter le Bureau de district de l'impôt.

L'impôt provincial des particuliers

Chacune des 10 provinces impose ses propres exigences fiscales sur le revenu des particuliers ressortissant à son autorité. A l'exception du Québec, aucune déclaration d'impôt provincial séparée n'est exigée du contribuable dont le revenu est soumis aux impositions provinciales.

Frais médicaux

Dans le calcul des impositions sur le revenu, le contribuable peut omettre au compte des frais médicaux tout frais acquitté par lui ou son représentant légal qui a été remboursé ou qui est susceptible de l'être en vertu d'un programme public ou privé de soins médicaux. Toutefois le contribuable peut déduire la différence entre le coût réel et le montant remboursé. De plus, les primes versées par un particulier à un programme de soins médicaux ou de soins hospitaliers pourront être déduites à titre de frais médicaux.

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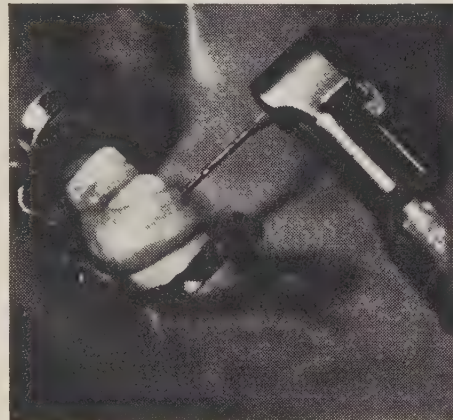
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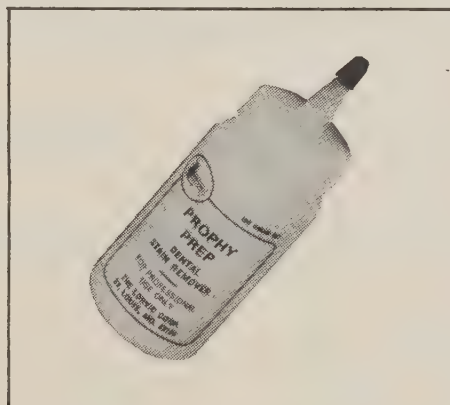
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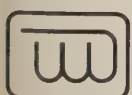
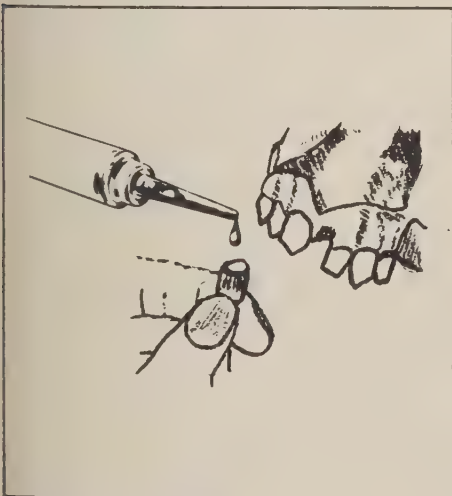


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The effects of three types of pins on the tensile strength of dental amalgam

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Winnipeg
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Atlanta, Georgia

The effects of three types of pins on the tensile strength of amalgam were determined. The pins used were of serrated stainless steel, smooth stainless steel or a composite capable of fusing with amalgam. Statistical analysis of the results showed that platinum-gold-palladium pins placed perpendicular to the tensile force proved superior. Both plated platinum-gold-palladium and serrated pins increased the tensile strength of amalgam when placed parallel to the tensile force.

Une étude a permis de déterminer les effets de trois types de tenons sur la résistance tensorielle de l'amalgame. Les tenons utilisés étaient en acier inoxydable cannelé, en acier inoxydable lisse ou en un alliage susceptible de se fondre avec l'amalgame. L'analyse statistique des résultats démontra que les tenons en platine-or-palladium disposés perpendiculairement à la force tensorielle fournissent un rendement supérieur. Les tenons en platine-or-palladium ainsi que les tenons cannelés augmentent la résistance tensorielle de l'amalgame quand ces derniers sont disposés parallèlement à la force tensorielle.

This report deals with the in vitro effects of three types of pins on the tensile strength of amalgam when they are placed with their long axes perpendicular to the tensile force as well as when their axes are positioned parallel to the applied force. The pins were made of serrated stainless steel, smooth stainless steel or a composition capable of fusing with amalgam.

Review of literature

Studies undertaken by Granath,¹⁻³ employing photo-elastic stress analysis, suggest that tensile stress might be a leading cause of amalgam failure. The results appear to indicate that compressive forces generated by occlusal contact are not of sufficient magnitude to cause failure but tensile stresses, induced under such conditions, may be of sufficient magnitude to exceed the low tensile strength of the material. Tensile forces can be applied basically in two directions in relation to pins placed in dental amalgam.

Markley^{4,5} suggested that the use of stainless steel wires embedded in dental amalgam would increase the tensile strength of the filling material. Zarb⁶ also suggested that pin-reinforced amalgam restorations were capable of exhibiting increased tensile strength values. No experimental evidence is available, however, to substantiate such claims. White⁷ attempted to increase the compressive and tensile strength of amalgam by utilizing stainless steel pins electroplated with gold or silver but found no advantage when using these materials.

Going, Nostrant and Johnson⁸ observed a significant decrease in tensile strength of amalgam after 24 hours when diametral tensile tests were conducted on specimens having the long axes of the pins perpendicular or diagonal to the tensile force.

Cecconi and Asgar⁹ reported the effect of pin location on the tensile strength of dental amalgam. Spherical particle alloy was used in this study.

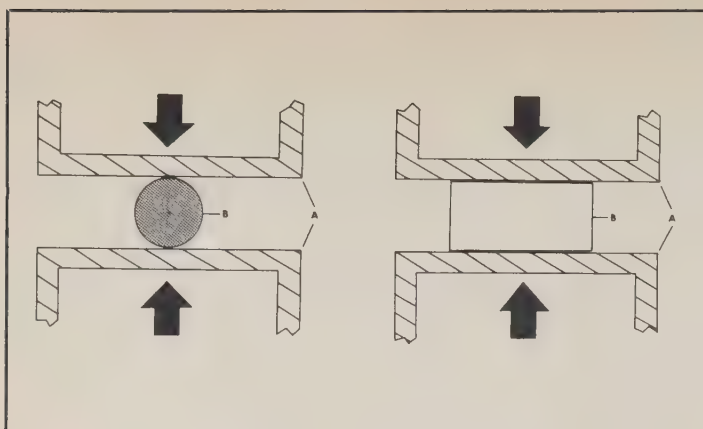


Fig 1 Diametral tensile test. A, bearing heads of testing machine. B, specimen in position.

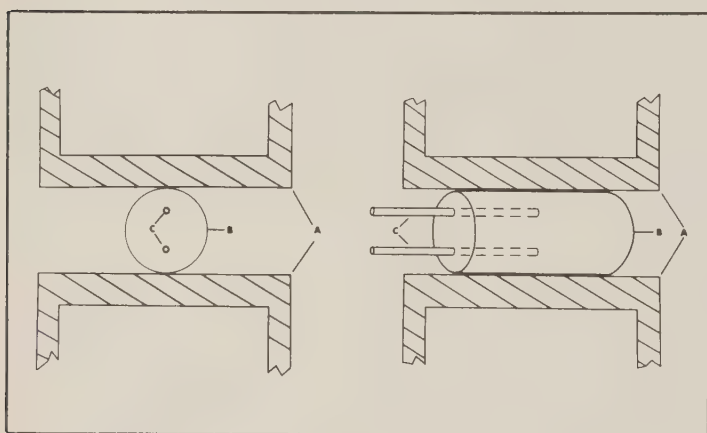


Fig 2 Placement of two-pin specimens for diametral tensile test. A, bearing heads of machine. B, specimen in position. C, pins.

Three types of pins were used: serrated stainless steel, copper-plated stainless steel, and silver pins. When pin placement was such that the long axis of the pin was perpendicular to the tensile force, a decrease in tensile strength was found with all three types of pins. Stainless steel and copper-plated stainless steel pins produced a greater decrease in strength than did the silver pins. With pin placement parallel to the tensile force, no difference in tensile strength was found between the control specimens without pins and those containing any of the three types of pin material.

Materials and methods

We used three commercially available silver alloys of the type commonly employed by dental practitioners: (1) a conventional alloy: 20th Century fine grain alloy (Caulk, Milford, Delaware); (2) a dispersion-phase alloy: Dispersalloy Spherical 400 (Western Metallurgical Co Ltd, Edmonton); (3) a spherical particle alloy: Spherallloy (Kerr Mfg Co, Detroit, Michigan).

The three types of pins were: (1) serrated stainless steel pins, 0.022 inches in diameter; (2) smooth stainless steel pins, 0.022 inches in diameter; (3) silver-plated platinum-gold-palladium pins, 0.023 inches in diameter as described in a previous paper.¹⁰

Ultimate tensile strength of amalgam specimens with pins positioned perpendicular to the tensile force — Sets of specimens of each of the three silver alloys were prepared for testing after one hour and 24 hours. One set of samples, without pins, acted as a control. Each of the other sets contained one or two of the three types of pin materials. A total of 252 specimens were prepared utilizing the same methods and materials as described in a previous paper.¹⁰ The diametral or splitting tensile test described by Koran and Asgar¹¹ was adopted for this study. The cylindrical specimens were laid on their side between the bearing heads of a Riehle testing machine (Fig 1). A compressive force was applied to the specimen using a head-speed of 0.022 inches per minute until failure of the specimen occurred. The tensile strength of the material was calculated from the formula $T = \frac{2P}{ld}$ where T is the splitting tensile strength in pounds per square inch (psi); P is the applied load, indicated by the dial on the testing machine in pounds; l is the length of the specimen in inches; and d is the diameter in inches.

Prior to testing, the edges of each specimen were smoothed with a hand file to provide even contact between the specimen and the bearing plates of the testing machine.

In order to ensure that pins were directly in the area of tensile stress generated within the sample, the two-pin samples were placed so that an imaginary line connecting the two pins was at right angles to the bearing surfaces of the testing device. Figure 2 demonstrates a two-pin specimen positioned between the heads of the testing apparatus.

Three specimens from each set were retained after tensile testing for residual mercury determination. One hundred and twenty-six determinations were made.

Diametral tensile strength of amalgam specimens with pins positioned parallel to the tensile force — The mould used to produce specimens for this test was the same as that described for the previous one. The plunger without holes was the only one used in the mould. The top of the mould was marked with a line to permit visual alignment of the pins within the specimen.

The pins, which measured 0.1764 inches in length ($s = 0.00005$), were placed in the amalgam specimen so that the long axis of the pin was at right angles to the long axis of the specimen. The direction of the pin was determined by visually

aligning it with the line scribed on the top of the mould (Fig 3).

In single pin specimens the pin was positioned after the second increment of amalgam had been condensed in the mould. It was placed in the correct position with small tweezers and tapped into the amalgam using a 0.101 inch diameter condenser. The remainder of the mould was filled with amalgam and finished as described previously.¹⁰ Prior to ejecting the specimen from the mould, a line was scribed on the specimen to facilitate orientation of the pins (Fig 4).

The two-pin specimens were prepared in the same manner, with the exception that one pin was placed after condensation of the first increment of amalgam and the second after condensing the third increment.

Preparation of the three-pin specimens was accomplished similarly, with each pin inserted after condensation of the first, second and third increments of amalgam.

The results obtained from the control specimens used for the previous tensile tests served as control values for this portion of the investigation.

Nine sets, consisting of a minimum of six specimens each, were prepared for testing after one hour for each type of alloy. A similar number of sets were prepared for the 24 hour test. The three types of pins, previously described, were used for this investigation. Thus, a total of 324 specimens were prepared for diametral tensile tests.

Prior to testing, the edges of each specimen were finished as previously described. To ensure that the pins were parallel to the tensile force during loading, the line scribed on the end of the specimen was aligned to be parallel with the bearing heads of the testing machine (Fig 5).

Throughout the investigation, the silver alloy used for each portion of the study was drawn from one batch of alloy produced by each manufacturer.

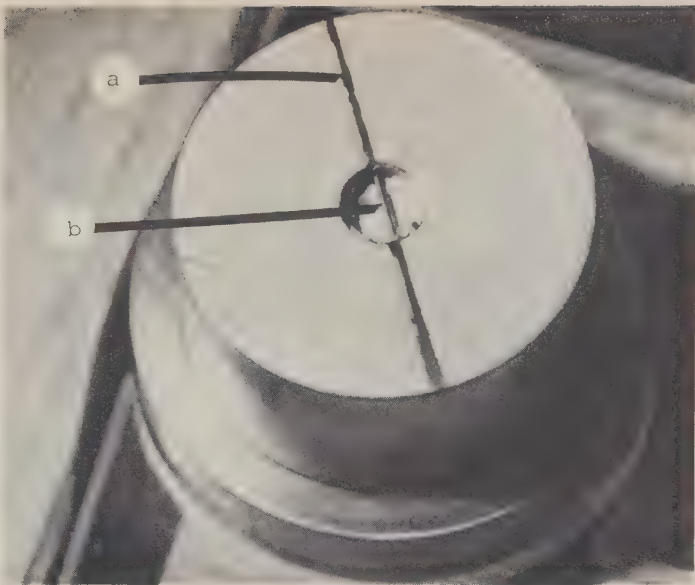


Fig 3 Modification of mould for horizontal tensile test showing pin placement. A, line scribed on surface of mould. B, pin aligned.

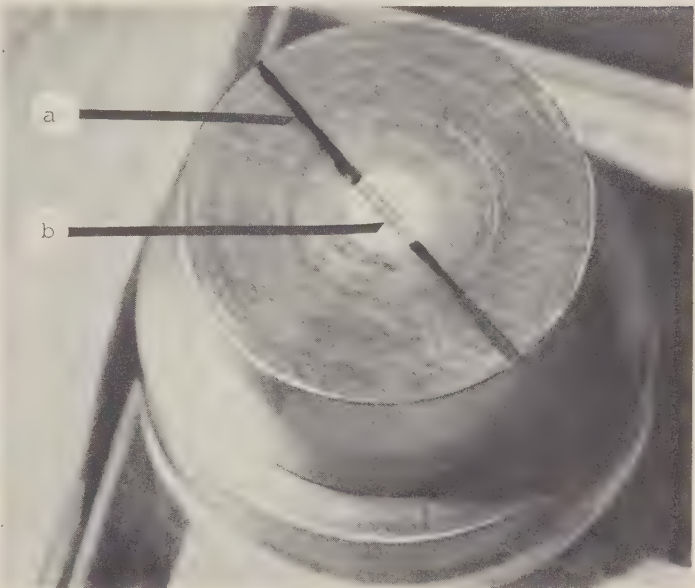


Fig 4 Finished horizontal tensile test specimen. A, line of mould. B, line on specimen placed with felt pen.

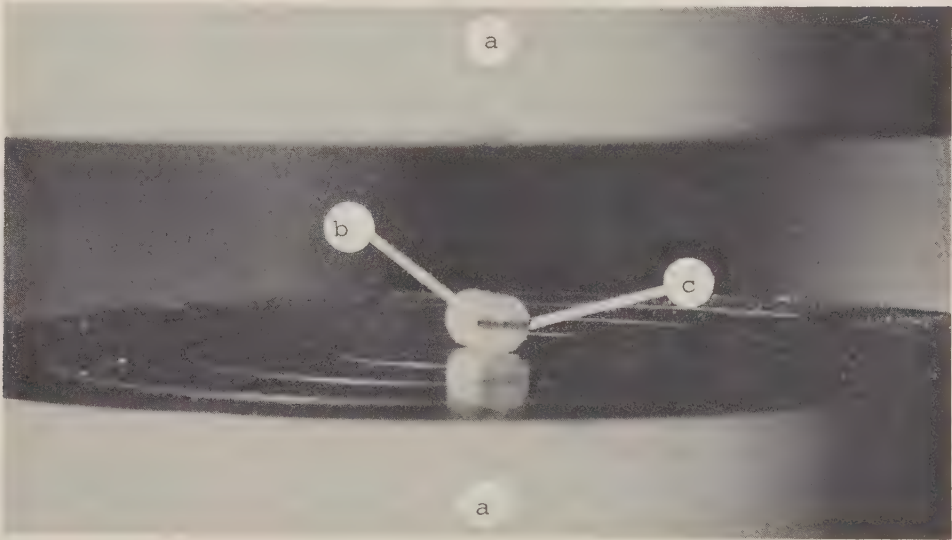


Fig 5 Horizontal tensile test specimen in place for testing. A, loading heads. B, specimen. C, line placed parallel to head of machine.

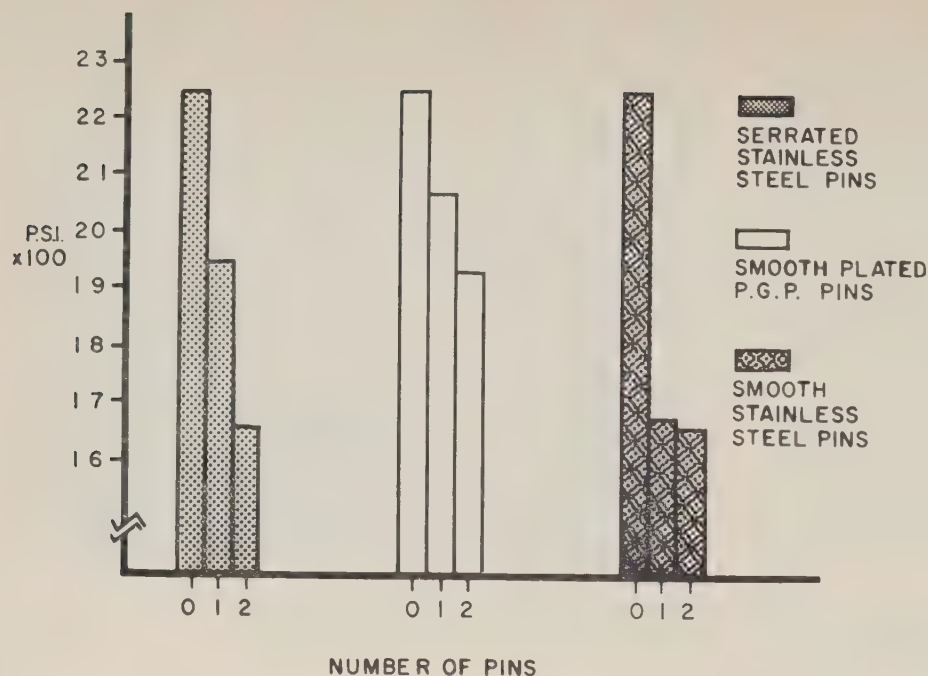


Fig 6 Effect of pins on the one hour tensile strength of amalgam irrespective of alloy type (pins placed perpendicular to the tensile force).

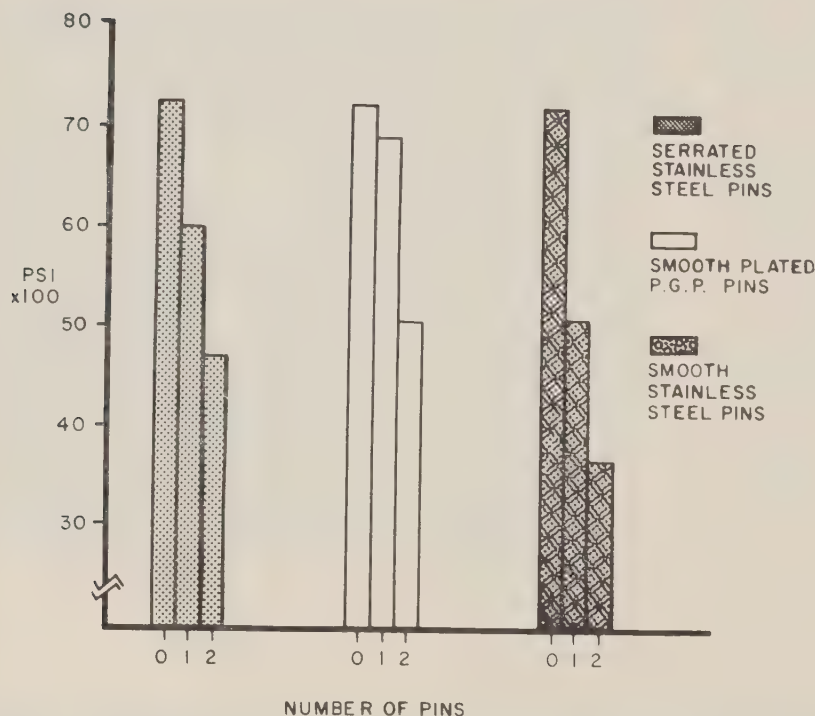


Fig 7 Effect of pins on the 24 hour tensile strength of amalgam irrespective of alloy type (pins placed perpendicular to the tensile force).

Results

Pins positioned perpendicular to the tensile force — The residual mercury content of the specimens tested ranged from 43.85 to 47.5 per cent by weight. A co-variance analysis indicated an absence of relationship between tensile strength and residual mercury concentration within the range studied.

The mean values for all combinations of pins and alloys tested at one hour are shown in Table 1. Statistical analysis of the results was accomplished using the Duncan's Multiple Range Test, as described in a previous paper.¹⁰

The effect of the three pin materials on the tensile strength of amalgam, irrespective of alloy type,

is illustrated by means of a bar graph in Figure 6. The corresponding Duncan's analysis is shown in Table 2.

A similar analysis was conducted on the values obtained from tests on 24 hour specimens. The mean value for all combinations of pins and alloys tested at 24 hours is shown in Table 3. The effect of pins on the 24 hour tensile strength of amalgam, irrespective of alloy type, is illustrated in Figure 7. The corresponding Duncan's Analysis is shown in Table 4.

A decrease in tensile strength was evident when the results of specimens containing one pin were compared to those of control specimens, irrespective

Effect of various pin materials on the one hour tensile strength of three dental amalgams. Pins placed perpendicular to the tensile force)

Table 1

Pin type and No.	Ultimate tensile strength (psi x 100)			
	Alloy			Mean
	Conventional	Dispersion	Spherical	
Control (no pin)	19.64	21.44	26.13	22.40
SS	16.91	19.83	21.53	19.42
P	17.31	21.37	23.10	20.60
SSS	16.71	13.56	19.79	16.68
S	13.24	15.23	21.24	16.57
P	16.48	18.34	22.77	19.20
SSS	17.76	16.27	15.62	16.55

SS = Serrated stainless steel
 S = Smooth plated platinum-gold-palladium
 SSS = Smooth stainless steel

Effect of various pin materials on the 24 hour tensile strength of three dental amalgams. Pins placed perpendicular to the tensile force)

Table 3

Pin type and No.	Ultimate tensile strength (psi x 100)			
	Alloy			Mean
	Conventional	Dispersion	Spherical	
Control	86.68	59.54	72.33	72.85
SS	65.30	60.97	55.03	60.43
P	72.40	68.03	68.34	69.59
SSS	58.11	37.61	58.73	51.49
S	50.42	42.50	55.03	47.54
P	55.31	41.07	56.51	50.97
SSS	36.71	36.18	38.45	37.12

SS = Serrated stainless steel
 S = Smooth plated platinum-gold-palladium
 SSS = Smooth stainless steel

Duncan's Multiple Range Test of results shown in Figure 6

Table 2

1-P	1-SS	2-P	1SSS	2-SS	2SSS	
*	**	**	**	**	**	NOPN
	NS	NS	**	**	**	1-P
		NS	**	**	**	1-SS
			**	**	**	2-P
				NS	NS	1SSS
					NS	2-SS

SS = Serrated stainless steel
 SSS = Smooth stainless steel
 P = Plated
 NOPN = Control (no pin)
 * P < 0.05
 ** P < 0.01

Duncan's Multiple Range Test of results shown in Figure 7

Table 4

1-P	1-SS	1SSS	2-P	2-SS	2SSS	
NS	**	**	**	**	**	NOPN
	**	**	**	**	**	1-P
		**	**	**	**	1-SS
			NS	NS	**	1SSS
				NS	**	2-P
					**	2-SS

SS = Serrated stainless steel
 SSS = Smooth stainless steel
 P = Plated
 NOPN = Control (no pin)
 * P < 0.05
 ** P < 0.01

of the type of pin employed. The specimens containing two pins demonstrated lower ultimate tensile strengths than the specimens containing one pin. Of the three types of pins tested, smooth stainless steel produced the greatest reduction in tensile strength, whereas the plated platinum-gold-palladium pins demonstrated the least.

At the one hour test period, as illustrated in Figure 6, the overall effect of plated pins, compared to stainless steel pins, was most notable when the results of specimens containing two pins were considered. Twenty-four hour results revealed the greatest difference when specimens containing one pin were compared, as shown in Figure 7.

Pins positioned parallel to the tensile force – Residual mercury ranged from 44.37 to 48.55 per cent for all three types of amalgam alloy. A covariance analysis indicated an absence of any relationship between the tensile strength and residual mercury content of the amalgam.

The mean tensile strength values for all combinations of numbers of pins and alloys tested at one hour are shown in Table 5. Statistical analysis of these results was performed as previously described.

The effect of pins on the one hour tensile strength of amalgam, irrespective of type of alloy, is shown in Figure 8. Table 6 describes the corresponding statistical analysis.

A similar analysis was conducted on results obtained from tests on the 24 hour specimens. The mean tensile strength values for all combinations of pins and alloys are shown in Table 7. The effect of pins, irrespective of alloy type, is illustrated in Figure 9.

At one hour, all three types of pins caused an increase in tensile strength of dental amalgam. The increase in strength was greater when the number of pins increased from one to three. The specimens containing plated platinum-gold-palladium pins demonstrated the most substantial increase in tensile

strength when two or three pins were used. An increase in tensile strength of lesser magnitude was also found when serrated stainless steel pins were used.

When tensile tests were conducted 24 hours after condensation, specimens containing serrated stainless steel and plated platinum-gold-palladium pins demonstrated a slight increase in tensile strength. The conventional amalgam alloy specimens, however, did not demonstrate a significant increase in strength with any type or number of pins. Overall, the greatest increase in strength was effected with the use of serrated stainless steel pins.

Discussion

The overall effect of placing pins with their long axes perpendicular to tensile stresses on amalgam was to reduce the ultimate tensile strength of the amalgam. This is in agreement with the results reported by Going, Nostrant and Johnson,⁸ and by Cecconi and Asgar.⁹ The reduction of strength was evident at both the one hour and the 24 hour test intervals. Each type of pin material produced a significantly different effect on the amalgam samples.

We feel that under tensile stress the pins behave like voids in amalgam specimens. Therefore, it is logical to assume that the larger the void or pin, the greater will be the weakening effect of the pin on the amalgam. The pins could provide the potential for a line of cleavage within the amalgam which could be responsible for earlier failure in tension. It was obvious that the smooth stainless steel pins created the largest void. These pins have a constant

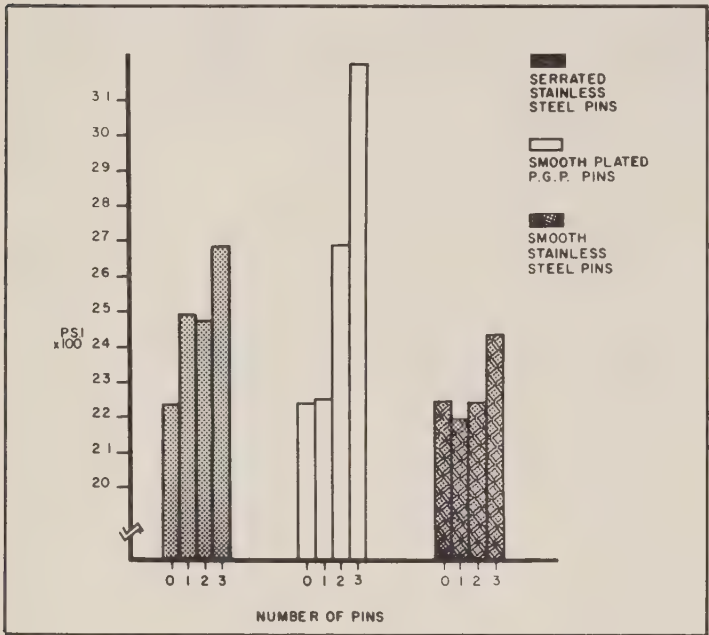


Fig 8 Effect of pins on the one hour tensile strength of amalgam, irrespective of alloy type (pins placed parallel to the tensile force).

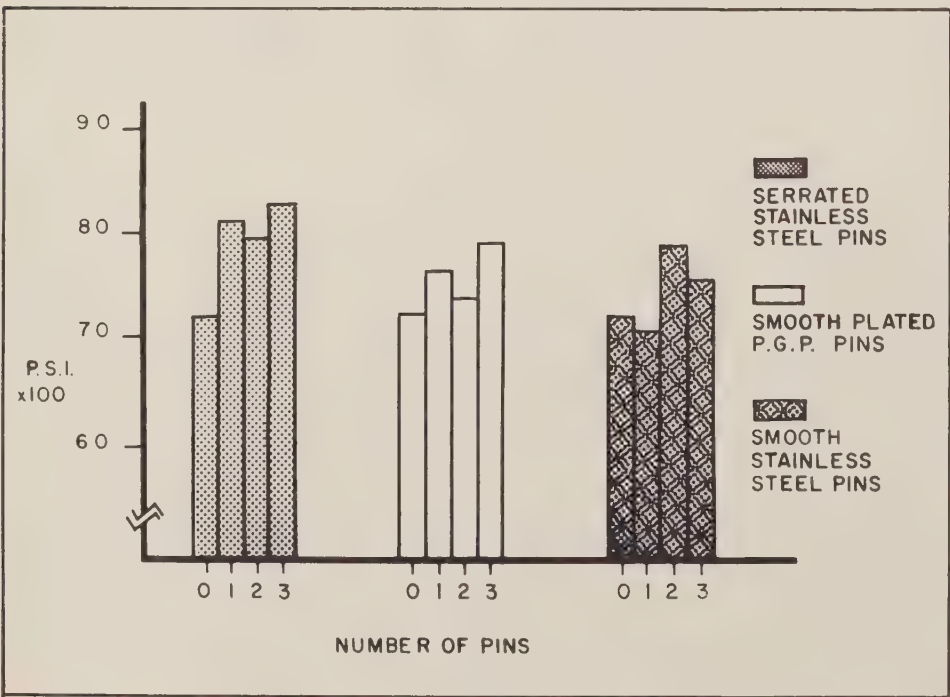


Fig 9 Effect of pins on the 24 hour tensile strength of amalgam irrespective of alloy type (pins placed parallel to the tensile force).

Effect of various pin materials on the one hour tensile strength of three dental amalgams. (Pins placed parallel to the tensile force)

Table 5

Pin type and No.	Ultimate tensile strength (psi x 100)			
	Alloy			Mean
	Conventional	Dispersion	Spherical	
Control (no pin)	19.64	21.44	26.13	22.40
SS	24.38	24.23	26.19	24.93
P	23.06	19.55	24.68	22.43
SSS	22.11	20.49	23.17	21.93
SS	24.77	22.67	26.82	24.75
P	27.43	22.9	30.17	26.83
SSS	21.21	19.59	26.33	24.75
SS	24.55	21.82	34.20	26.86
P	31.20	30.10	34.58	31.96
SSS	23.55	21.89	27.41	24.28

S = Serrated stainless steel
 = Smooth plated platinum-gold-palladium
 SS = Smooth stainless steel

Duncan's Multiple Range Test of results shown in Figure 8

3-SS	2-P	1-SS	2-SS	3SSS	1-P	NOPN	2SSS	1SSS	
**	**	**	**	**	**	**	**	**	3-P
	NS	*	**	**	**	**	**	**	3-SS
		*	**	**	**	**	**	**	2-P
			NS	NS	**	**	**	**	1-SS
				NS	**	**	**	**	2-SS
					*	*	*	**	3SSS
						NS	NS	NS	1-P
							NS	NS	NOPN
								NS	2SSS

SS = Serrated stainless steel
 SSS = Smooth stainless steel
 P = Plated
 NOPN = Control (no pin)
 * P < 0.05
 ** P < 0.01

Effect of various pin materials on the 24 hour tensile strength of three dental amalgams. (Pins placed parallel to the tensile force)

Table 7

Pin type and No.	Ultimate tensile strength (psi x 100)			
	Alloy			Mean
	Conventional	Dispersion	Spherical	
Control (no pin)	86.68	59.54	72.33	83.26
SS	86.90	71.27	85.66	81.28
P	83.85	62.89	82.74	76.50
SSS	80.32	60.51	75.73	72.19
SS	88.73	73.22	78.65	80.20
P	80.32	61.57	80.19	74.03
SSS	86.23	67.08	83.19	78.84
SS	89.37	73.35	85.27	83.26
P	82.45	71.01	81.23	78.23
SSS	86.28	55.12	85.27	75.56

S = Serrated stainless steel
 = Smooth plated platinum-gold-palladium
 SS = Smooth stainless steel

Duncan's Multiple Range Test of results shown in Figure 9

1-SS	2-SS	2SSS	3-P	1-P	3SSS	2-P	NOPN	1SSS	
NS	NS	NS	*	**	**	**	**	**	3-SS
	NS	NS	NS	NS	*	**	**	**	1-SS
		NS	NS	NS	NS	*	**	**	2-SS
			NS	NS	NS	NS	*	**	2SSS
				NS	NS	NS	*	*	3-P
					NS	NS	NS	NS	1-P
						NS	NS	NS	3SSS
							NS	NS	2-P
								NS	NOPN

SS = Serrated stainless steel
 SSS = Smooth stainless steel
 P = Plated
 NOPN = Control (no pins)
 * P < 0.05
 ** P < 0.01

Table 8

diameter which may form a straight line of cleavage through the specimen. The largest diameter of the serrated stainless steel pins was the same as that of the smooth stainless steel pins; however, the serrations in the pin had the effect of reducing the average diameter. Because the matrix of amalgam adapts very closely to the serrations, the volume of the void in the amalgam specimen could account for the greater influence of the smooth stainless steel pins on the reduction of tensile strength of

amalgam when compared to the serrated material. The plated pin, by virtue of its ability to fuse with the amalgam matrix, appears to eliminate the effect of the void at the interface of the pin and the amalgam which occurs when stainless steel pins are used. The fusion of the plated pin to the amalgam could also reduce the effect of the pin, acting like a void within the amalgam specimen.

It is suggested that, when ultimate tensile strength tests are conducted on specimens con-

taining two pins, a definite cleavage plane is established in the specimen along the long axes of the pins. This effect is thought to be the result of the pin acting like a void in the amalgam, even with the plated pins. This is most evident in 24 hour tests. However, in all three types of amalgam, the plated pins caused less of a reduction in strength than the serrated or smooth stainless steel pins. This decreased effect was not statistically significant when plated platinum-gold-palladium and serrated stainless steel pins were compared.

At one hour, all pins, regardless of type, placed parallel to the tensile stress, caused an increase in the tensile strength of dental amalgam. In general, the increase in strength was greater as the number of pins within the specimen increased from one to three. These findings are at variance with those of Cecconi and Asgar,⁹ who found no significant difference in strength, although some suggestion of a trend toward increased strengths could be observed in their results. The specimens containing plated platinum-gold-palladium pins demonstrated the most substantial increase in strength when two or three pins were used. A significant increase in strength was also found with serrated stainless steel pins. The increase was less than with the plated pins and was not thought to be of a significant magnitude to have clinical importance. When tensile tests were conducted 24 hours after condensation, it was found that specimens containing serrated stainless steel and plated platinum-gold-palladium pins demonstrated a slight increase in tensile strength. In no instance was the increase of the same magnitude as results of the one hour test.

Of the three alloys, only the conventional amalgam specimens failed to demonstrate a significant increase in tensile strength, although a trend toward increasing strength values was evident with the use of serrated stainless steel pins. The remaining types of alloy revealed significant increases in strength with the use of pins, particularly when two or three were used.

The greatest increase in strength was effected with the use of serrated stainless steel pins. The plated and smooth stainless steel pins had a similar but smaller effect on the tensile strength of the amalgam specimens.

The strengthening effect of the embedded pins on the amalgam specimens appeared to be a function of their retention within the amalgam. The pins tended to increase the resistance of the amalgam to the splitting tensile force by stapling the two halves of the specimen together.

One hour tensile values of specimens containing pins seemed to indicate that the metallurgical bond formed between the matrix and the plated platinum-gold-palladium pins is stronger than the mechanical

interlocking of the matrix in the serrations of the threaded pin. This would cause the plated pins to influence the strength of the specimen to a greater degree than the serrated pins. This difference could be caused by the accumulation of mercury around the serrated and plated pins during condensation. Because both the silver-plated layer of the pin and the unreacted alloy particles can react with mercury a rapid reaction and solidification of this area should occur. In the case of the serrated pin materials, the reaction can only proceed from the amalgam toward the pin by crystal growth of the gamma-I and gamma-II phases of the amalgam matrix. A mechanical lock could thus require a longer period of time to form. This could result in a greater reinforcing effect by the plated pins during the early setting period.

At the 24 hour test period, the mechanical locking effect of the serrated stainless steel pins caused the specimens to offer more resistance to the splitting tensile force than did the plated pins.

It is suggested that plated pins prepared as described in a previous paper¹⁰ can be modified to contain serrations. This may aid in the prevention of isthmus fracture of Class II amalgam restorations if a pin is placed along the pulpal floor, extending into the proximal area. This, however, will require further study to determine.

Conclusions

1. The use of pin materials for purposes of retention resulted in a decrease of the ultimate tensile strength of dental amalgam. Platinum-gold-palladium pins caused less of a decrease in strength than did the stainless steel materials.

2. When pin placement in amalgam was such that the long axis of the pin was parallel with the tensile force, both the plated and serrated pins appeared to increase the tensile strength of the amalgam.

3. Within the range of residual mercury content of the amalgam tested in this study, there was no correlation between strength and the residual mercury content.

4. Because of the progressive decrease in tensile strength in specimens containing stainless steel pins, we recommend that a minimum number of adequately spaced pins be used.

5. It may be advantageous to use pins capable of fusing with the amalgam to reduce the tensile strength loss in amalgam restorations.

6. Further investigation is necessary to determine whether plated pins with serrations may be advantageous in preventing tensile failure at the isthmus of Class II amalgam restorations.

Summary

The effects of three types of pin material on the tensile strength of three different amalgams were determined by mechanical tests conducted on a total of 576 specimens. These were divided into groups of six or more, each containing a specific combination of type and number of pins and type of alloy. Sets of specimens with pins embedded to simulate their use for retentive purposes were subjected to tensile loads to determine their ultimate strength properties. Similar tensile tests were performed on specimens with pins placed parallel to the tensile stress to simulate pins being used for reinforcement of amalgam. Standardization of specimen preparation was assured by residual mercury determinations performed on every second specimen.

Statistical analysis of the results was accomplished utilizing an analysis of variance followed by the Duncan's Multiple Range Test. With pins placed perpendicular to the tensile force, the platinum-gold-palladium pins proved superior in maintaining the tensile strength of the specimens. Both plated platinum-gold-palladium and serrated pins increased the tensile strength of amalgam specimens when placed parallel to the tensile force.

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Co-ordination of dental materials science and techniques with clinical dentistry at the freshman level

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Clinical practice was combined with theoretical and laboratory instruction in dental materials science for freshman students at Dalhousie University Faculty of Dentistry. The students thereby gained a more meaningful recognition of the relationship between the physical properties of dental materials, their manipulation and the oral environment.

La Faculté dentaire de l'Université Dalhousie a combiné la pratique clinique avec l'enseignement au laboratoire du cours de sciences des matériaux dentaires pour les étudiants de première année. Les étudiants obtiennent ainsi une meilleure compréhension de la relation entre les propriétés physiques des matériaux dentaires et leur manipulation dans le milieu buccal.

To emphasize the significance of dental materials science in the practice of clinical dentistry, the dental educator is faced with some important problems. If he presents a course in materials science, the freshman student sees it only as another hurdle to be cleared before getting involved in "real" dentistry. Even with a course which includes a laboratory program for evaluating the properties of materials there is no direct relevance to clinical dentistry. Only when the student uses dental materials clinically does he recognize the relationship be-

tween their physical properties, their manipulation and the oral environment.

A 1968 survey of preclinical techniques in dental curricula¹ indicated that many schools gave a separate course in dental materials, often prior to the preclinical laboratory course. Some programs were entirely theoretical while others contained a scientific laboratory component. However, most of the schools conducted separate technique courses in the areas of operative dentistry, fixed partial prosthodontics and removable prosthodontics.

It is the contention of this paper that a course in dental materials science relevant to clinical dentistry, hinging on the clinical application of materials, can be developed. Student motivation would be strengthened by combining dental materials science, preclinical techniques and clinical procedures in the freshman year.

The advantages and disadvantages of introducing clinical dentistry, oral prophylaxis and prosthodontics at the freshman level were described by Terkla in 1964.² Though this approach was not common at that time, the advantages outweighed the disadvantages. Students were enthusiastic about early clinical experience. The early exposure of dental students to clinical operative dentistry has recently been reported³ and complete denture prosthodontics has been taught without the preclinical use of a manikin.⁴

Lack of space may exclude freshmen students from the clinics of many dental schools. They can, however, carry out clinical procedures on each other. Dental laboratory techniques can also be performed and clinical evaluations made by each student acting both as an operator, technician and patient during a theoretical and laboratory course in dental materials. A learning experience can be acquired in the freshman course by using such prosthodontic materials as gypsum products, impression materials and dental resins, studying their chemistry, and learning the techniques of abrasion and polishing.

Objectives of the learning experience

- 1. The student will relate the theory of dental materials to dental techniques and clinical practice.
- 2. The student will manipulate each material and observe alteration in its properties with manipulative changes.
- 3. The student will acquire manual skills in dental techniques.
- 4. The student will acquire manual skills in clinical techniques with a student patient.
- 5. The student will develop a proper student-patient relationship.
- 6. The student will evaluate clinical techniques and the manipulation of materials both as clinician and patient.

Phases in clinical and technical procedures

In cooperation with the Division of Prosthodontics at Dalhousie University, Halifax, a co-ordinated approach was followed by interspersing lectures, demonstrations, laboratory and clinical operations. The physical and manipulative properties of each material to be used were discussed and demonstrations of procedures were given. Each student made an alginate impression of the dentition of

Common problems with technique procedures Table 1
listed by freshmen students

Surface roughness
Voids and projections in the resin
Improper manipulation of the impression material
Improper procedures for making the impression
Poor handling of the dental stone in preparing the cast
Incomplete sealing of the stone cast
Incomplete resin polymerization
Poor finishing procedures
Distortion of the palatal piece
Resin polymerization and excess monomer
Water absorption and evaporation from the resin
Induced stresses and relaxation in the resin
Heat and friction wear during polishing
Bulk of resin material in the palatal piece
Resin too thick, particularly in the tongue space
Over-extension into the soft tissue
Finishing procedures for the palatal piece
Excess resin around the dentition
Uneven abrasion and polishing of the resin

another student in his class. He next poured his own cast in dental stone. Each student then prepared a palatal piece, using cold-cure denture resin, which was finished, polished and adjusted to be a wear-able appliance. It was worn for a few days by the student to check its fit and comfort.

After each procedure the student and clinician checked the product. Deficiencies in laboratory and clinical techniques were indicated to the students and were corrected as far as possible. The reality of wearing a palatal piece gave the student physical evidence of the success or failure of his work and enhanced his awareness of the psychological effects experienced by the patient who wears dentures.

Results of the course

With each clinical procedure the students and demonstrator checked the product together, providing immediate feedback. Class discussion outlined some of the shortcomings and allowed the student to express his opinion about any problems which he had encountered in the techniques. After wear- ing the palatal piece for a few days each student

Common clinical problems in wearing a Table 2
palatal piece listed by freshmen students

Surface roughness
Tissue soreness
Gingival irritation
Cause of gagging
Bulk and shape
Cause of gagging
Patient comfort
Fit and retention
Psychological effect
Speech impairment
Space for the tongue
Eating, chewing and swallowing
Distortion
Failure to store in water
Warpage and loss of retention
Thermal conductivity
Eating and drinking hot and cold foods
Lack of taste of foods
Cleanliness
Food sticking while eating
Tissue irritation from food
Cleaning of the resin
Abrasion and wear of the resin

wrote an account of his observations and experiences. Observations on technical procedures (Table 1) and clinical problems of the patient are presented (Table 2). These were mostly the clinical manifestations of some of the physical properties considered in the basic science component of the course.

Results and conclusions

This course presentation showed that the theory of dental materials science could be successfully combined with dental techniques and clinical practice for freshmen students. They were motivated to the objectives of the course and provided valuable feedback and evaluation from their experiences. They were given some early insight into the development of a proper student-patient relationship without the exactness required with a clinical patient. The students were enthusiastic about this approach for this portion of the course. None of the fundamentals of the basic course in dental materials science were sacrificed in this approach.

In the whole procedure the student was the patient, clinician, technician and evaluator. Courses

or parts of courses which combine basic science with dental techniques and clinical practice expose the freshman student to the conditions he will experience in the clinic. It is our opinion that this is an advantage in the teaching of dental materials science and clinical dentistry.

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The author acknowledges the assistance of Doctors D. V. Chaytor and A. H. Ervin, Division of Removable Prosthodontics, in the presentation of this course.

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The endosseous blade implant: Report of two cases

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G. A. Morgan, DDS
Toronto

Endosseous blade implants have tissue-tolerant metal blades which are buried in bone and serve as supports and abutments for a fixed dental prosthesis. Orthopaedic plates, pins and bars may be inserted deep within the body tissues, but a dental implant does not have this advantage. It requires sufficient jawbone into which the blade may be inserted; otherwise the implant may be forced or driven into the maxillary sinus, the inferior dental canal, the various foraminae, or neurovascular regions. Stability of the blade implant results from a wedging action in the prepared groove and when bone grows around and through the blade.¹⁻⁷

Seven basic rules for blade implants

1. Patient evaluation: This should include accurate evaluation of clinical and physical findings, supplemented by medical and dental histories and by panoramic and periapical radiographs.
2. Blade selection: The blades should be structurally and architecturally designed to fit into a confined predetermined available space. Care should be taken to avoid adjacent anatomical structures, such as the sinuses, nerves, foramina, blood vessels and neurovascular bundles.
3. Tissue care: Minimum trauma to soft and hard tissues is essential and is achieved by careful surgical technique in which the periosteum is cleanly separated from the underlying bone and carefully retracted.
4. Blade insertion: Correct positioning and insertion of the blade is essential in order to achieve rapid healing by primary intention.
5. Bur size: New sharp burs of the correct dimension and used with sufficient water are employed when drilling into the osseous structure.
6. Blade adaptation: The blades should adapt passively into the grooves prepared by the bur.

7. Blade depth: The shoulders of the blades are embedded at least 2 mm into the osseous structure.

The final prosthesis should be placed in position as soon as possible after primary healing has taken place and the sutures are removed. In tooth-borne appliances, the periodontal membrane which surrounds the abutment teeth allows for some degree of mobility, whereas a blade implant rigidly placed into the osseous structure does not permit any such movement. The prosthesis should therefore adapt passively over the blade abutments and rest lightly on the adjacent mucous membrane.

The following case reports illustrate the procedure.

Case reports

Case 1 — This case illustrates a full arch restoration for posterior edentulous areas in the mandible. The patient, a 55 year old female in apparently good health, had a full maxillary denture and a partial denture supported by seven remaining mandibular teeth. Her chief complaint was pain on mastication, which we attributed in part to extensive bilateral alveolar bone loss in the mandibular posterior regions.

The findings from clinical and physical examination, from the history and from panoramic and periapical radiographs were within normal acceptable limits for blade implant procedures.

After selecting the proper blades, an incision was made from the buccal aspect of the retromolar pad along the alveolar crest to the first bicuspid on the left side and to the cuspid on the right side. The soft tissue along with the periosteum was retracted with a broad, dull periosteal elevator, taking care not to mutilate the tissue or the periosteum.

With the alveolar crest thus exposed and using a sharp 700XL bur, we cut on each side a narrow groove lingual to the crest, penetrating into the

mylohyoid ridge parallel to the mandibular canal. By avoiding the centre of the alveolar crest we practically eliminated the risk of penetrating the mandibular canal.

The anteroposterior length of each groove was made slightly longer than that of the corresponding blade, while its depth was similar to or slightly deeper than that of the blade. The grooves were kept thin so that the blades might fit passively but firmly. Both blades were tapped mesially with a shoulder set instrument to set them parallel with the labial inclination of the seven anterior teeth. Our chairside assistant supported the lingual plate of bone as we tapped the blades, thus reducing the risk of fracture of the mylohyoid ridge.

Sufficient sutures were used in each quadrant to close the incisions and all surgical sites were cleansed with Calendula, a blood coagulant developed by Boericke & Fafel (New York and Philadelphia) to promote haemostasis.

We did not place temporary implant splints in the posterior areas so that healing might proceed unimpeded by any covering of the gingiva. The implant posts were also kept out of occlusion to minimize any possibility of traumatic movement.

Following the operation, the patient was given 1.5 ml dexamethasone sodium phosphate (Decadron phosphate) IM in order to control post-operative inflammation and swelling.

Approximately two weeks after surgery the tissues around the implants were fully healed (Fig 1). The seven anterior teeth were prepared for full coverage and a hydrocolloid impression was taken of the full arch in preparation for making a one piece porcelain to metal prosthesis (Fig 2). The full arch casting now fitted over the protruding implant posts and the natural abutment teeth and was carefully checked for proper gingival adaptation (Fig 3). We wanted to be certain that there would be no tissue impingement; this is important because the pain experienced from pressure frequently exceeds that caused by a faulty implant.

After securing a second wax bite registration with the metal framework in the mouth, the bridge

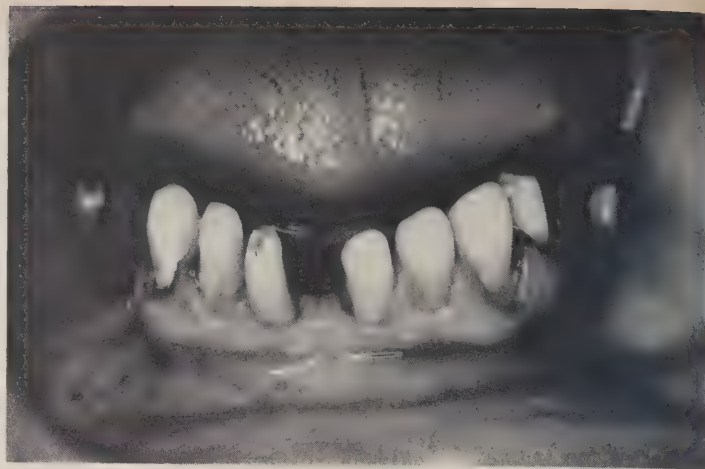


Fig 1 Case 1: tissues around implants fully healed two weeks after insertion of endosseous blades.

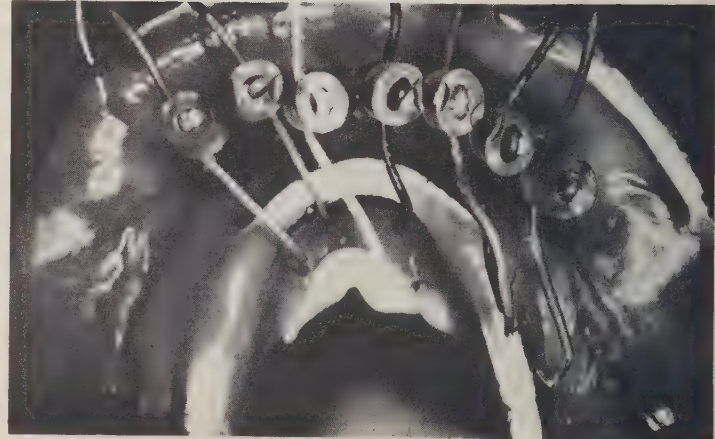


Fig 2 Anterior teeth prepared for full coverage prior to construction of a one piece porcelain to metal prosthesis.

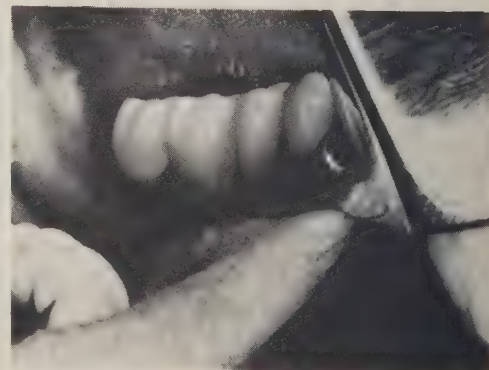
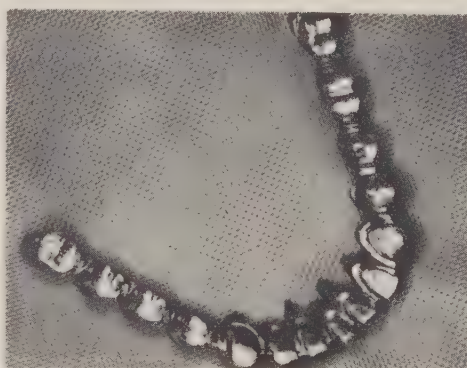
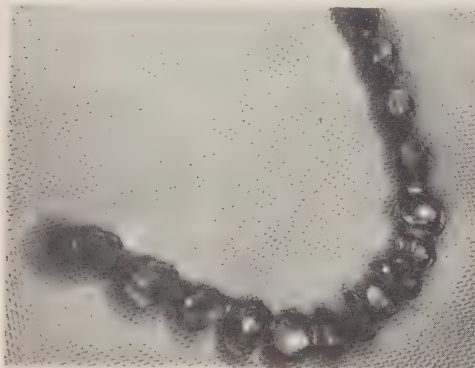


Fig 3 Full arch casting fitted over implant posts and abutment teeth.

was completed to this new centric occlusion (Fig 4) and cemented into position using a carboxylate cement (Durelon) over the natural teeth and a composite material (Adaptic) over the implant abutments (Fig 5). Finally, the cemented prosthesis was spot ground to eliminate any premature occlusal contacts and all occlusal adjustments were completed directly in the mouth (Fig 6-8).

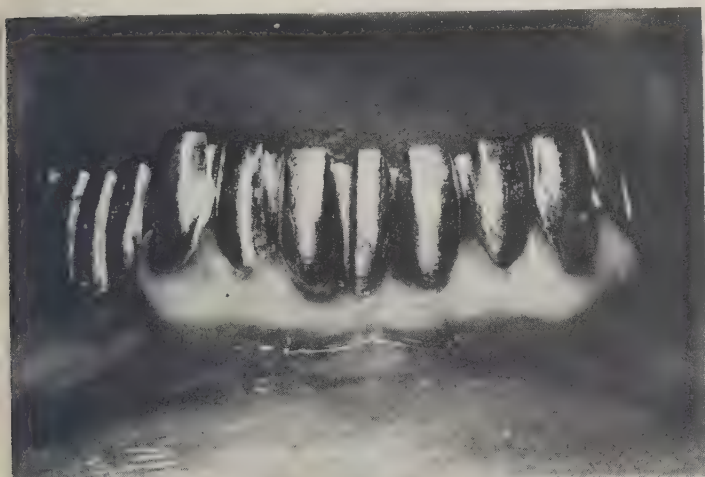


Fig 4 Completed bridge.

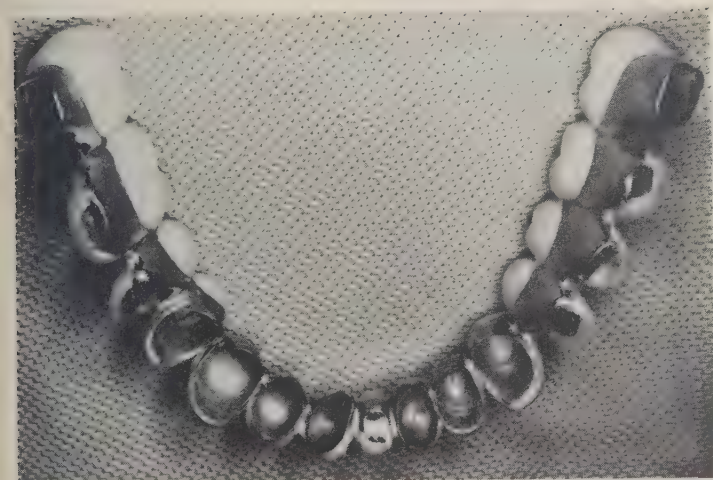


Fig 5 Bridge cemented into position.



Fig 6 Occlusal adjustments are made directly in the mouth.

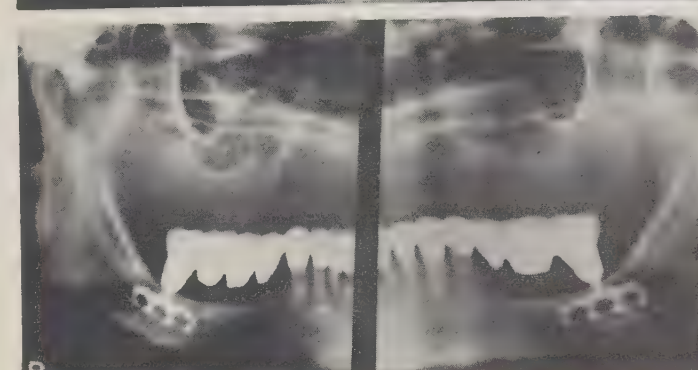
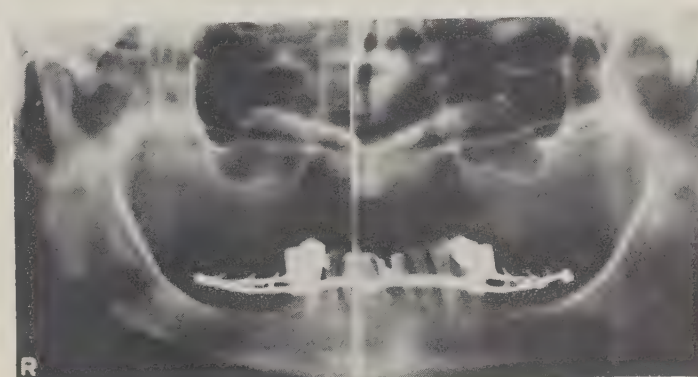


Fig 7 Pre-operative and postoperative panoramic radiographs.

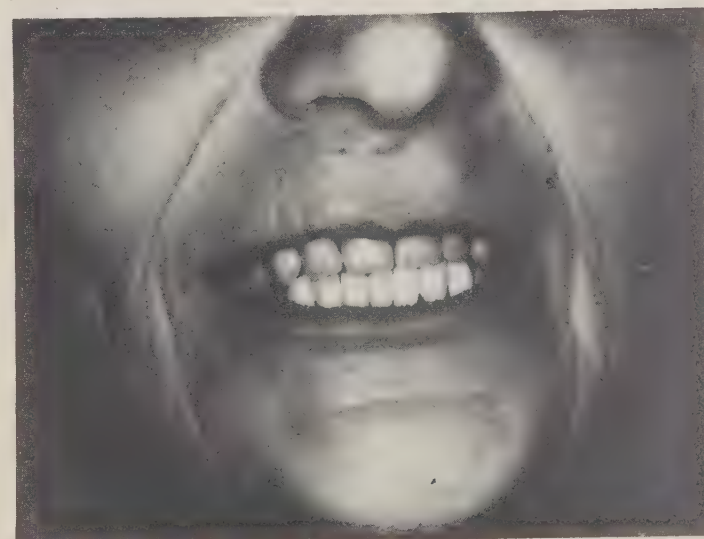


Fig 8 Clinical appearance of finished restoration.

Case 2 — This case illustrates the use of bilateral endosseous blades for a prosthesis replacing the first and second mandibular molars. The patient was a 39 year old female. The findings from clinical and physical examinations and from panoramic and periapical radiographs were compatible with blade implant procedure (Fig 9, 10).

Using operative procedures as described in the preceding case, the blades were set in position in predetermined areas on both sides of the mandible (Fig 11, 12). A fixed prosthesis was then cemented to the implant posts (Fig 13, 14).



Fig 9 Case 2: radiographs illustrating bone depth and texture in both mandibular molar regions.

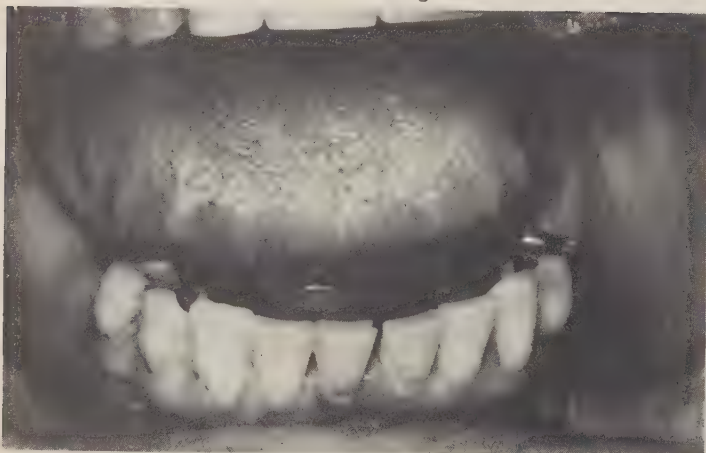


Fig 10 Clinical appearance of implant site.

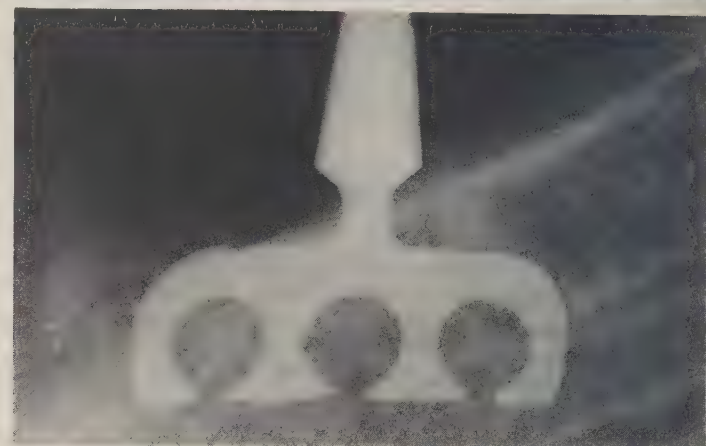
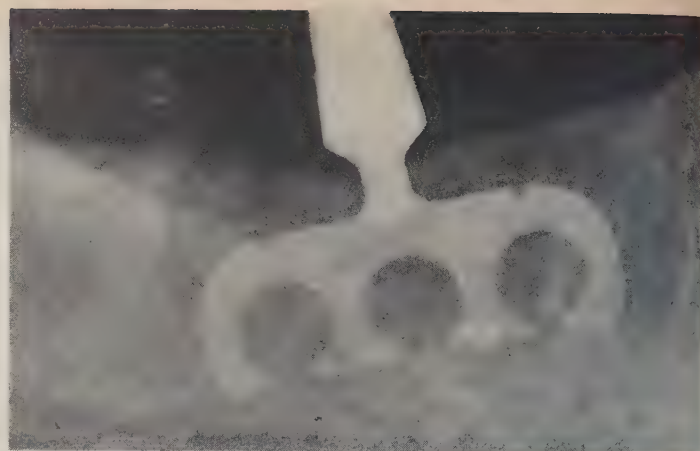


Fig 11 Implants in position.



Fig 12 Implant posts protruding in the mandibular second molar region.

Supportive measures

Selective medication can enhance the local anaesthesia and diminish postoperative pain. Accordingly, we prescribe for our patients 40 tablets of erythromycin 250 mg, to be taken at the rate of four a day in evenly divided doses (q 6 h) for six days prior to surgery and four days following the operation. They also receive 60 tablets of bromelains (Ananase) 500,000 units. These are taken at the rate of two tablets every four hours for two days preceding and three days after the operation.

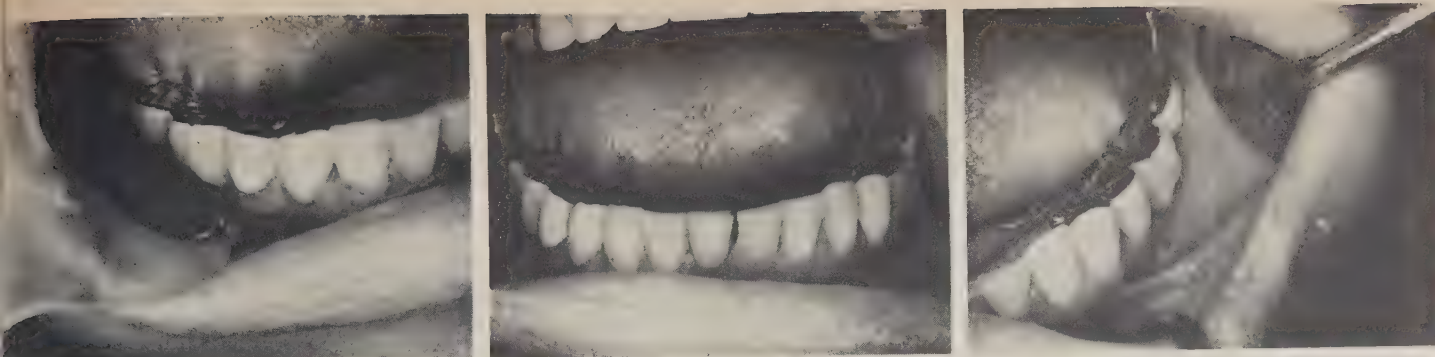


Fig 13 Bridge cemented into position.

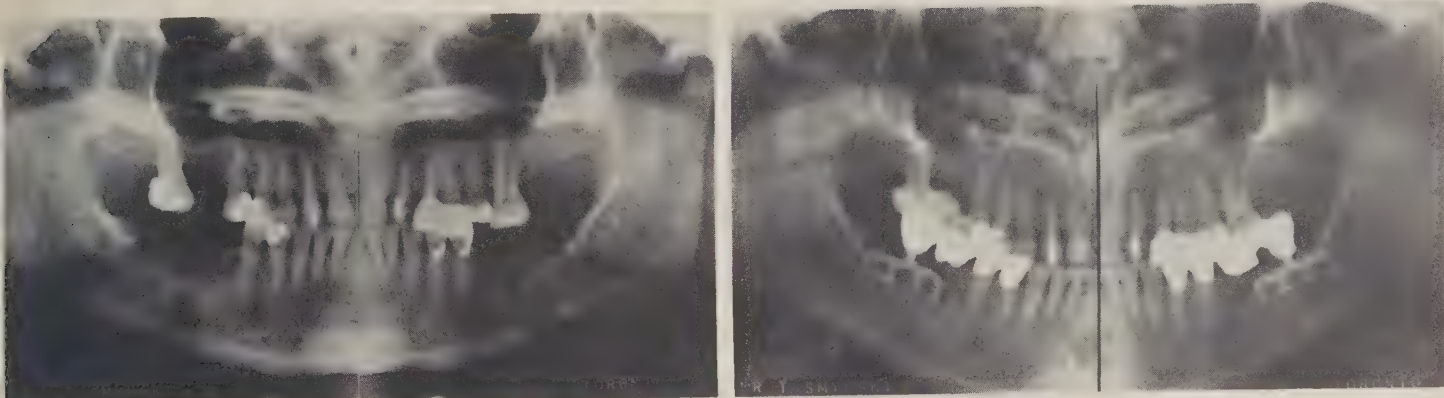


Fig 14 Pre-operative and postoperative panoramic radiographs. Note placement, position and depth of the blade implants.

A plant protease concentrate, bromelains is an anti-inflammatory enzyme used adjunctively to control inflammation and oedema associated with the postoperative tissue reactions. Pulvules of Darvon with ASA (propoxyphene HCl 65 mg with acetylsalicylic acid 325 mg) are supplied to the patient and may be taken at the rate of one every four hours if required for control of postoperative pain.

Ice bags are applied postoperatively to both sides of the face and under the chin for 15 minutes. After a waiting period of 15 minutes this procedure is repeated four times.

To maintain adequate oral hygiene we instruct our patients to rinse their mouths gently every three hours, using a warm saline solution (1 teaspoonful of salt to a glass of warm water), commencing on the day after the operation and continuing for the next seven days.

During the week following the operation, their diet should be soft and free of nuts, uncooked fruits and vegetables and unminced meats.

Summary

The two cases described illustrate the bilateral replacement of mandibular bicuspid and molars

by prostheses attached to endosseous blade implants. The principles governing the successful use of these implants are also outlined.

This paper was adapted from the presentation to the 9th International Implantology Seminar in Paris, France, Oct 6-8, 1972.

Dr. Druck is a demonstrator in the Faculty of Dentistry, University of Toronto, and Dr. Morgan is with the Department of Dentistry at St. Michael's Hospital, Toronto. Reprint requests to Dr. Druck at 235 Dixon Rd, Weston 625, Ont.

- 1 Linkow, L. I. and Cherchève, R. Theories and techniques of oral implantology. St. Louis, Mosby, 1970.
- 2 Linkow, L. I. Clinical evaluation of the various designed endosseous implants. *J Oral Implant Transplant Surg* 12:35, 1966.
- 3 Idem. Endosseous oral implantology; a seven year progress report. *Dent Clin N Amer* 14:185, 1970.
- 4 Linkow, L. I. and Weiss, J. L. The endosseous blade; a progress report. *Int J Orthodont* 7:155, 1969.
- 5 Linkow, L. I. Mouth reconstruction for the edentulous maxilla using endosseous blades. *Dent Conc* 12:3, 1969.
- 6 Cranin, A.N. Oral implantology. Springfield, Ill, Charles C. Thomas, 1970.
- 7 Babbush, C. A. Endosseous blade-vent implants: a research review. *J Oral Surg* 30:168, 1972.

Book Reviews

Principles of Pathology for Dental Students

J. B. Walter, M. C. Hamilton and M. S. Israel. Ed 2. London, Churchill, 1971. (Available from Longman Canada Ltd, Don Mills, Ont) 463 p. Illus. \$13.50

General pathology is a rapidly advancing field and, in recent years, many changes have occurred in our basic knowledge of this subject. Consequently, after a period of four years or so, the authors have been well advised to produce a second edition and have made a number of distinct alterations in bringing their original textbook up-to-date. In doing so they have performed an excellent service both for students and the staff who teach them.

The high-pressure instructional courses in today's professional schools leave little time for wide and leisurely reading of individual subjects; consequently, it is essential that knowledge be made available to the student in a clear and concise package. In contrast to this need, however, dental students in North America are doubly plagued by over-inflation of the basic science courses which their studies necessarily embrace. Firstly, North American textbooks are usually far more bulky than their European counterparts. Clarity of subject matter and ease of learning often suffer in consequence. Secondly, dental students are at a further disadvantage because many of their "required texts" were written primarily for medical students. Often, they are given little guidance as to what portion of a book they are expected to master.

Pathology for Dental Students solves both problems. It is small and presents in less than 450 handy-sized pages a clear, concise and adequately illustrated

account of general pathology in sufficient coverage for the average dental course. Inevitably, some areas are rather sketchy, but fundamental principles of pathology are adequately covered and the book attempts to motivate and hold the student's interest by referring to many common dental examples. The updated text is a little longer than the first edition, and illustrations have been revised and improved. Its format and technical production maintain the high standards of the earlier version; the type is clear and easily readable. The judicious use of italics in the main body of the text helps to accentuate important subheadings within paragraphs.

Any dental student who learns and thoroughly understands the content of this little manual will acquire a good foundation for subsequent studies of dental disease. This approach is more profitable than the fashionable procedure of reading and learning in a woolly fashion from one of the many inflated medical tomes on general pathology.

J. D. Spouge

Orban's Oral Histology and Embryology

Harry Sicher and S. N. Bhaskar, ed. Ed 7. St. Louis, The C. V. Mosby Company, 1972. 393 p. Illus. \$15.50

This book has now reached its seventh edition and is generally considered as the standard text on the subject. It is beautifully produced, the many photomicrographs are of the highest quality and the print is easy to read.

Unfortunately, because there are so few textbooks of dental histology

available and therefore a lack of competition, complacency pervades this edition. With the notable exceptions of the chapters on enamel, dentine and cementum, there has been little revision. For example, the chapter on tooth eruption is, for the most part, the same as in the second edition, published in 1949, from which this reviewer first learnt his dental histology. The most recent reference in this chapter, apart from a 1970 citation of a textbook authored by one of the editors, is dated 1946. This could be accepted if there had been no further work on the subject of tooth eruption; but much has been learned in the past 25 years and it is therefore hard to fathom why this edition perpetuates the myth of the cushion hammock ligament and ignores the role of the periodontal ligament.

This is not an isolated example. The chapter on the periodontal ligament, a tissue which has been extensively investigated in the past 10 years, has as its most recent reference a publication dated 1962. The description of the epithelial attachment ignores the work of Listgarten, first published in 1966 and amply confirmed by others, describing the exact nature of the attachment. Strangely, reference is made to Listgarten's work in another context in the chapter on enamel. But the dynamic nature of the attachment, demonstrated in the early sixties, is also ignored. As a further example, the chapter on resorption of teeth has as its most recent reference a publication dated 1940.

The book has some merit in that the more static aspects of the subject are lucidly described, well illustrated and require no revision. The real problems seem to be the lack of firm editorship and the paucity of contributions from dental histologists. Both factors militate against the production of an up-to-date text.

In conclusion, it is difficult to reconcile the statement in the preface that "future advances in dental practice will come only if due respect and recognition are granted to the biology of the orofacial tissues" with the failure of this edition to recognize many of the rapid and significant advances in the biology of the orofacial tissues over the past 25 years.

A. R. Ten Cate

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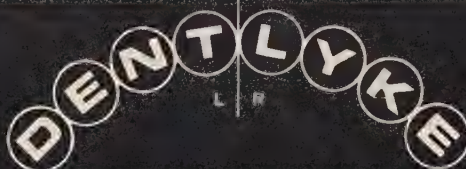
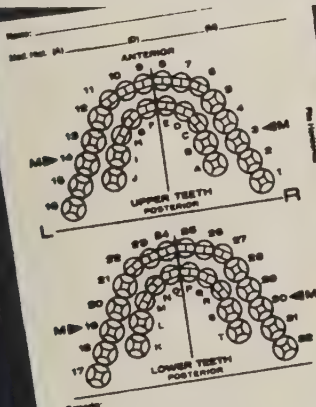
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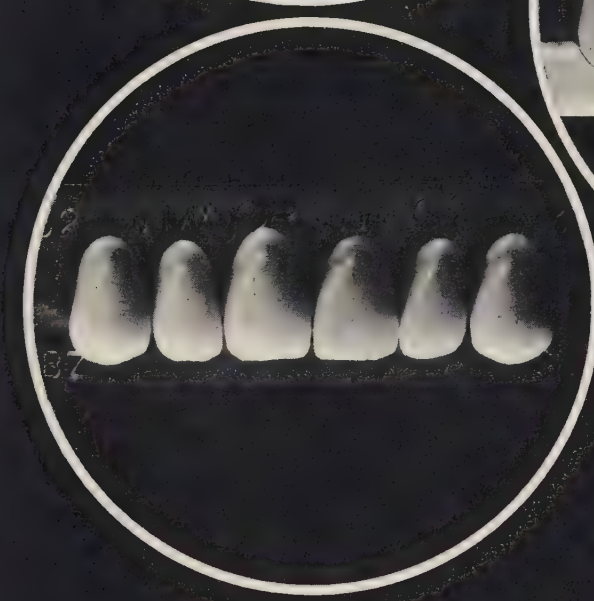
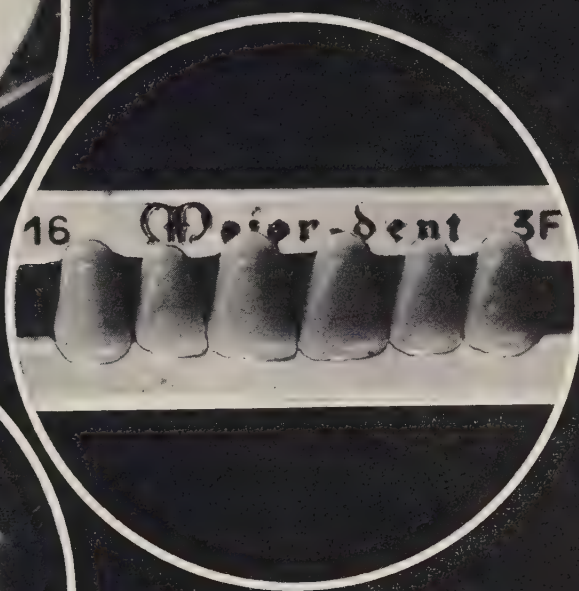
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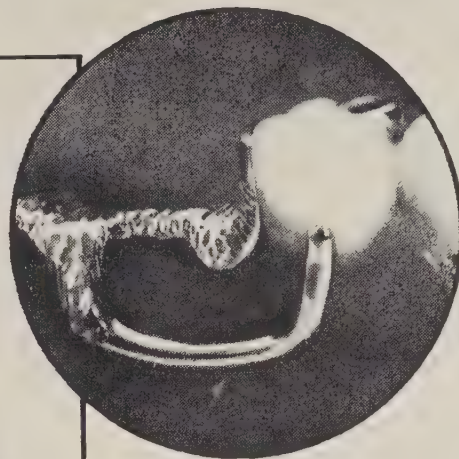
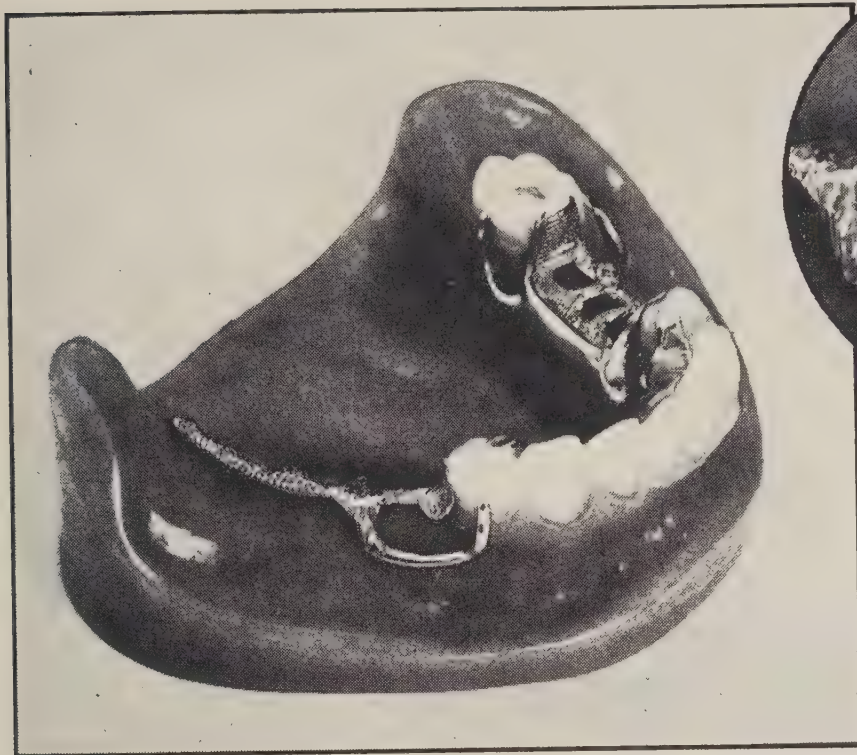
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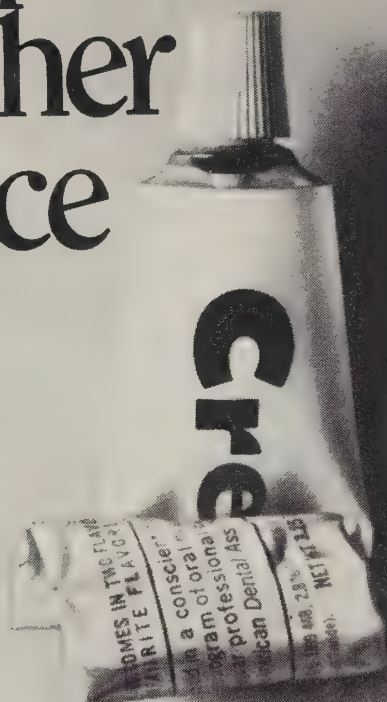
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5. J. Dental Res., 39:871, 1960
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7. J. Dent. Child., 28:5, 1961
8. J.A.D.A., 64:216, 1962
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12. J.A.D.A., 72:408, 1966
13. J.A.D.A., 73:853, 1966
14. J.A.D.A., 77:594, 1968
15. J. Canad. Dent. Assoc., 36:262, 1970

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- Maxillo-mandibular surgery for correction
of dentofacial deformities: 1. Pre-operative
evaluation
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Announcements/Avis

Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont, Oct 2-5
1975 St. John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1973 Sydney, Australia, July 15-20
1974 London, England, Sept 8-14

Royal College of Dentists of Canada

Part I Examinations (Basic Sciences) Sept 24, 1973. Applications and \$100 fee must be received before Mar 31, 1973.

Part II Examinations (Oral) Dec 7-8, 1973. Eligibility is based on successful completion of the Part I Examination, plus submission of required case histories, and the lapse of five years since the candidate began his graduate training. Written intent to sit this examination with \$100 examination fee must be received before Mar 31, 1973.

Application forms for the Part I Examinations and further information may be obtained from J.E. Speck, Secretary-Registrar-Treasurer, Suite 614, 170 St. George St, Toronto, Ont M5R 2M8.

Canadian Meetings

Canadian Public Health Association, at Queen Elizabeth Hotel, Montreal. Apr 24-27, 1973. Canadian Public Health Association, 1255 Yonge St, Toronto 7, Ont.

Les Journées Dentaires du Québec, à l'Hôtel Bonaventure, Montréal. 25-27 avril 1973. Denis LaFlamme, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. Apr 25-27, 1973. Denis LaFlamme, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of Saskatchewan, at Regina. May 4-5, 1973. T. E. Donovan, 205 McCallum Hill Bldg, Regina, Sask.

Ontario Chapter, Canadian Society of Dentistry for Children, at Royal York Hotel, Toronto. May 13, 1973. A. F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Royal York Hotel, Toronto. May 13-16, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont.

Canadian Academy of Oral Pathology, at Montreal. May 14-19, 1973. Dennis Forest, Faculté de chirurgie dentaire, Université de Montréal, CP 6128, Montréal 101, Qué.

Association des Spécialistes en Chirurgie Buccale du Québec, à Montréal. 15-16 mai 1973. Guy Maranda, 565 St-Jean, Québec 4, Qué.

American Academy of Oral Pathology, at Bonaventure Hotel, Montreal. May 15-19, 1973. G. G. Blozis, College of Dentistry, Ohio State University, Columbus, Ohio 43210, USA.

Northwest Academy of Dental Medicine, at the Empress, Victoria, BC. May 24-27, 1973. Gladys H. Underwood, 610 SW Alder St, Portland, Oregon 97205, USA.

Alberta Dental Association, at Lethbridge. June 7-8, 1973. R. D. Kinniburgh, Centre Village Mall, 1204 - 2nd Ave AN, Lethbridge, Alta.

Association of Canadian Faculties of Dentistry, at Château Montebello,

Montebello, Que. June 12-15, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Western Canada Dental Society, at Winnipeg. June 27-30, 1973. J. P. Beattie, 308 Kennedy St, Winnipeg 2, Man.

Dental Hygiene Section, Western Canada Dental Convention, at Winnipeg Inn, Winnipeg. June 30, 1973. Mrs. Vivian Burdenium, 2 Peel Cres, Winnipeg, Man.

Northern Ontario Dental Association, at Kirkland Lake, Ont. Sept 7-9, 1973. J. R. Brookfield, 2 Second St, Kirkland Lake, Ont.

Atlantic Provinces Dental Convention, at Charlottetown, PEI. Sept 16-19, 1973. A. L. MacLean, 293 Water St, Summerside, PEI.

Canadian Society of Oral Surgeons, at Mont-Gabriel Lodge, Mont Gabriel, Que. Oct 7-9, 1973. Pierre Surprenant, Suite 201, 230 King St W, Sherbrooke, Que.

Canadian Academy of Periodontology, at Vancouver. Oct 12-13, 1973. J. D. Stewart, 311 Rubidge St, Peterborough, Ont K9J 3P3.

Canadian Academy of Restorative Dentistry, at Vancouver, Oct 12-13, 1973. E. V. Gowda, Suite 201, 1590 Bellevue Ave, West Vancouver, BC.

Association of Canadian Faculties of Dentistry, at Vancouver. Oct 13, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Canadian Association of Orthodontists, at Vancouver. Oct 13-15, 1973. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask S7K 3M4.

Canadian Academy of Prosthodontics, at Vancouver. Oct 13-14, 1973. W. G. Woods, 123 Edward St, Toronto 101, Ont.

Canadian Academy of Endodontics, at Vancouver. Oct 14-15, 1973. P. R. Dow, Suite 1009, 925 W Georgia St, Vancouver 1, BC.

Canadian Society of Public Health Dentists, at Vancouver. Oct 14-17, 1973. J. M. Conchie, 14265 - 56th Ave, Surrey, BC.

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Canadian Dental Hygienists Association, at Vancouver. Oct 14-18, 1973. Linda J. Hunter, 3350 Cedar Crescent, Vancouver 9, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

Les Journées Dentaire du Québec, à l'Hôtel Bonaventure, Montréal. 1-3 mai 1974. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. May 1-3, 1974. Mr. Bastien, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Vancouver. May 1-4, 1974. College of Dental Surgeons of BC, Suite 325, 925 West Georgia St, Vancouver 1, BC.

Ontario Chapter, Canadian Society of Dentistry for Children, at Four Seasons-Sheraton Hotel, Toronto. May 12, 1974. A. F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 12-15, 1974. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont.

Alberta Dental Association, at Palliser Hotel, Calgary. May 29-31, 1974. J. R. Duncan, 306, 1711 - 4th St SW, Calgary, Alta.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R. C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J. J.

Schachter, 210 Canada Bldg, Saskatoon, Sask S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor, Ont. Oct 2-5, 1974. J. M. Conchie, 14265 - 56th Ave, Surrey, BC.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

International Meetings

Finnish Dental Society and Finnish Dental Association, at Helsinki. Mar 29-31, 1973. Finnish Dental Society, Bulevardi 30 B, SF-00120 Helsinki 12, Finland.

International Association for Dental Research, at Washington, DC. Apr 11-15, 1973. A. R. Frechette, 211 East Chicago Ave, Chicago, Ill 60611, USA.

International Congress of Odontology and National Spanish Congress, at Barcelona, Spain. Apr 29-May 5, 1973. A. de Udaeta, Tapineria, 10, entlo, Barcelona, Spain.

Royal Society of Health, at Eastbourne, England. Apr 30-May 4, 1973. The Secretary, Royal Society of Health, 13 Grosvenor Place, London, SW1X 7EN, England.

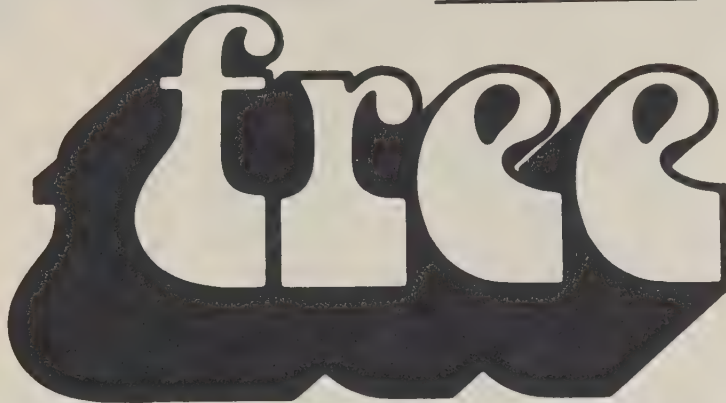
British Dental Association, at Southport, England. June 11-15, 1973. J. N. Peacock, 64 Wimpole St, London W1M 8AL, England.

International Symposium on Biological Medicine, at Lausanne, Switzerland. June 20-24, 1973. III International Symposium on Biological Medicine, chemin du Frêne 11, CH-1004 Lausanne, Switzerland.

American Dental Society of Europe, at Lucerne, Switzerland. July 1-4, 1973. James Page, 65 Mount Ephraim, Tunbridge Wells, England.

4e Congrès International de Pédiodontie, à Paris. 10-13 juillet 1973. Secrétariat Société Française de Pédiodontie, 33 rue Poissonnière, Paris 2e, France.

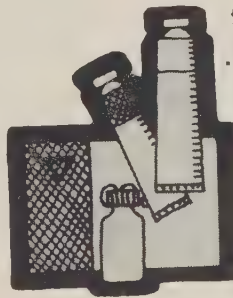
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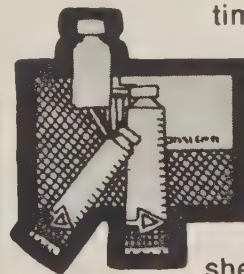
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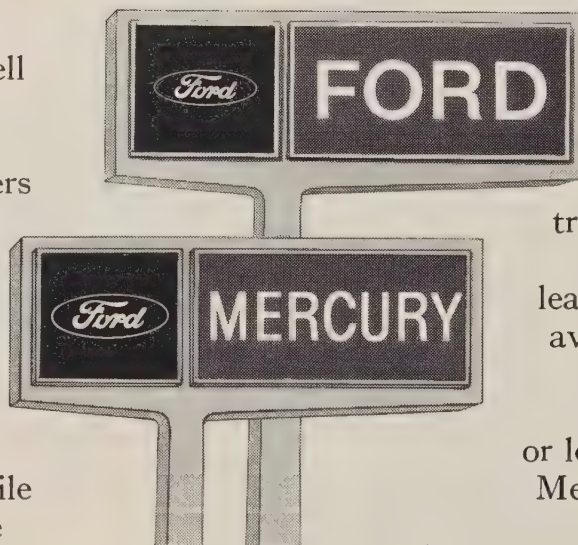
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den-si-ty (den-sa-tē) *n.*, *pl.* -ties [Fr. *densité* < *L. densitas*]
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negative 2. quantity or number per unit, as of area (the density of population) 3. *Elec.* same as **CURRENT DENSITY** 4. *Pl.* same as **DENSITY** of the mass of an object

dent (dentən, [M], var. of dent) 1. a slight hollow made in a surface by a blow or pressure 2. an appreciable effect or impression, as by lessening —*vt.* to make a dent in —*vi.* to become dented

dent² (dent² n. [Fr. < L. *dens*: see DENTAL] a toothlike projection as in a gear wheel, lock, etc.

dental /den.təl/ *n.* 1. *Anatomical.* A tooth or teeth. 2. *Dentistry.* The study of teeth. 3. *Phonetic.* Relating to the sound produced by placing the tip of the tongue against or near the upper front teeth — *n.* *Phonet.* a dental consonant (*th, th*)
— *den.tal-ly adv.*

- * **dental floss** thin, strong thread for removing food particles from between the teeth
- * **dental hygienist** a dentist's assistant, who cleans teeth, takes dental X-rays, etc.

dent-*ti-* (den'tə, -ti) [*< L. dens: see DENTAL*] *a combi-
form meaning tooth or teeth [dentiform]: also, before
vowel, dent-*
den-ti-cle (den'ti k'l) *n.* [*L. denticulus, dim. of dens: s
DENTAL*] a small tooth or toothlike projection
den-tic-u-late (den tik'yoo lit, -lāt') *adj.* [*L. denticulatus*
1. having denticles 2. having dentils 3. Bot. finely denta-
Also **den-tic'u-lat'ed** — **den-tic'u-late-ly** *adv.*
den-tic-u-la-tion (den tik'yoo lā'shən) *n.* 1. the quali-
or condition of being denticulate 2. a denticle
den-ti-form (den'tə fōrm') *adj.* [*DENTI- + -FORM*] too-
shaped

den-ti-frice (-frīz') *n.* [ME. *dentifricie* < L. *dentifricium* tooth powder < *dens* (see DENTAL) + *fricare*, to rub] a preparation for cleaning teeth, as a powder, paste, or liquid.

den-tig-er-ous (den tī'jər əs) *adj.* bearing teeth
den-til (den'til) *n.* [MFr. *dentille*, dim. of *dent* < L. *dens*; see **DENTAL**] *Archit.* any of a series of small rectangular blocks projecting like teeth, as from under a cornice

den.tin (den'tin) *n.* [dens (gen. *dentis*): see DENTAL -*tin*]. The hard, dense, calcareous tissue forming the body of the tooth, under the enamel, also the part of the tooth projecting like teeth, as from under a cornice.

dentist (di-'tēn, -tīn) *n.* *Pl. dentists* • *Md. dentist* a *L. de* + *dentis* "of teeth" • *dentist* the care of teeth and the surgical diseases affecting the prevention of a disease • *dentist* a person who repairs and making between artificial ones, the correction of malocclusion, etc.

den-tist-ry (-rē) *n.* the profession or work of a dentist
den-ti-tion (den tish'ən) *n.* [*L. dentitio*, a teething
dentire, to cut teeth < *dens*: see DENTAL] 1. the teething
process 2. the number and kind of teeth and their arrange-
ment in the mouth

den·to- (den'tō, -tə) 1. same as DENTI- 2. a combining form meaning dental or dental and [*dentosurgical*]

effective (den'ti'frik) *n.* [ME. *dentifric* < L. *dentifricus* tooth powder < *dens* (see DENTAL) + *fricare*, to rub] a preparation for cleaning teeth, as a powder, paste, or liquid

den-tig-er-ous (den ti'j'ər əs) *adj.* bearing teeth

den-til (den'til) *n.* [MFr. *dentille*, dim. of *dent* < L. *dens*: see DENTAL] *Archit.* any of a series of small rectangular blocks projecting like teeth, as from under a cornice

den-tin (den'tin) *n.* [*<* L. *dens* (gen. *dentis*): see DENTAL] a hard, dense, calcareous substance forming the body of a tooth, under the enamel; also *dentine* (-tēn, -tin)

dentist (den'tist) *n.* [Fr. *dentiste* < MFr. *dentista* < L. *dentifex* a person who repairs teeth] the care of teeth and the surgical measures taken for the prevention of a disease of the teeth, or the correction of malocclusion, etc.

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By JOSEPH M. SIM, B.S., D.D.S., M.S.D. December, 1972. 329 pages plus FM I-XII, 7" x 10", 528 illustrations. Price, \$27.85.

MOSBY
TIMES MIRROR

Letters/Courrier

The Journal devotes this section to comments by readers on topics of current interest to dentistry. The editor reserves the right to edit all communications to fit available space. Printed communications do not necessarily reflect the opinion or official policy of the Canadian Dental Association. Your participation in this section is invited.

Cette partie du Journal est consacrée aux communications des lecteurs sur les questions d'actualité dentaire. La rédaction se réserve le droit d'adapter les communications à l'espace disponible. Les communications publiées ne représentent pas forcément l'opinion ou la politique officielle de l'Association Dentaire Canadienne. Vous êtes invités à participer à cette section du Journal.

The degree dilemma

I would like to comment on Dr. L. P. Robert's excellent and timely letter which appeared in the October issue of the Journal.

I completely concur that the dentist should be designated as such with a universally recognized degree. It is foolish to have a Doctor of Dental Surgery, a Doctor of Dental Medicine, a Bachelor of Dental Surgery, a Doctor of Odontology, etc, when all do exactly the same thing and all have been exposed to about the same type of training.

A Doctor of Dental Science (DDS) seems a logical, appropriate and descriptive degree. It does not misrepresent anything and is an all-embracing term whereas degrees which specify dental surgery or dental medicine connote certain limitations. In addition, the fact that some professionals can use the title "doctor" while many of their colleagues with equivalent education and training must be satisfied with "mister" is somewhat demeaning.

A basic degree of Doctor of Dental Science will also allow for better under-

standing and clarification of the post-graduate and specialty degrees in dentistry.

Dr. Robert's letter should be translated into English and reprinted in the Journal so that those who did not read his original in French may do so in their own language.

Hopefully, something can be done to correct this degree dilemma that harasses dentists and the dental profession today.

*Albert A. Antoni, DDS, FRCD(C)
The Antoni Clinic
East Sunrise Highway
Freeport, Grand Bahama*

Editor's note: As requested by Dr. Antoni, we have had Dr. Robert's letter translated and are including it here for the benefit of our English speaking readers.

The DDS

Since the Tower of Babel, since the multiplication of tongues, men have searched for a common language so they could better understand each other.

In early times Greek was the universal language and, under the Roman Empire, Latin predominated. Scientists communicated in Latin in the Middle Ages and the Church of Rome still uses it as its working language. Many universities characterize their diplomas by use of Latin.

In our day, imbued with national pride, people are jealous of their language. Academies are most resistant to change; they fiercely defend the integrity of their idiom and will give up nothing but crumbs; certain countries are even reproached for being too willing to accept strange terms of which the nuances seem to differ from their own.

Some of our confrères refuse to shelter under the American abbreviation DDS (Doctor of Dental Surgery). However, one should make an honest recognition of the Americans in dentistry; one must admit that they are still pioneers and innovators. Great names

adorn our profession; at random we can mention Morton, H. Wells, Black.

It only remains to say that dentistry is a universal science which existed with the early Egyptians, the Greeks and the Romans. This science, belonging not to any one country or people, happily today is serving humanity in all continents.

It would seem appropriate therefore to refrain from slavishly using the expression "Doctor of Dental Surgery" and, instead, to translate (the Latin) into an international term that would be acceptable to all.

The conventional abbreviation DDS would suffer nothing in the American sense by translating the Latin *Doctor Dentaria Scientia* into the much more logical term "Doctor of Dental Science."

This designation would cover the complete science of dentistry and cross the frontiers of countries where a doctorate or a licentiate in dental science is granted.

The DDS (doctor) or LDS (licentiate) would become *Doctor* or *Lictus Dentaria Scientia* to the satisfaction of all and with prejudice to none.

In order to come into effect, this proposition, once accepted by our respective associations, would then have to be started on its way toward the World Health Organization through the medium of the universities.

Accepted officially, the DDS and his designation would become international and recognized everywhere.

*L. P. Robert, DDS
3430 ave Vendôme
Montréal, Qué*

Correction

Please be advised that the information carried in the news section of the November Journal relative to the dental plan negotiated by Algoma Steel Corporation and the United Steelworkers of America is inaccurate.

This particular plan is Blue Cross No. 7 and it covers 100 per cent of the 1969 ODA fee schedule with no deductible provision.

*L. B. Lukenda, DDS
Medical Dental Centre
8 Albert St East
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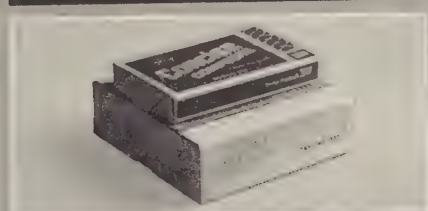


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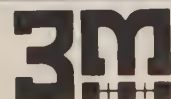
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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

The question of professional incorporation by dentists has been discussed and argued at length. A recent decision of the federal court, handed down as a result of an appeal from a Tax Appeal Board ruling, may be of interest to those dentists who are still considering the possibilities of incorporation.

There is nothing in our federal tax laws to prevent the professional from setting up a management corporation for his practice. Heretofore, however, there have been two main obstacles hindering the dentist from taking this step. First, the profession's codes of ethics have said that the dentist must assume full responsibility for the services he renders to his patients — not a limited liability available under corporate structure. Secondly, the tax authorities have in most instances looked upon the professional incorporation as a sham to artificially avoid tax and have therefore ruled against it.

Recently, most dental licensing authorities and professional codes have changed their positions from outright opposition to professional incorporation, to acceptance of the principle so long as the corporation carries out only those aspects of the practice that are purely business or administrative, preserving the personal relationship between doctor and patient for the service aspect of the practice, the dentist assuming full personal liability.

An over-simplified example of this type of arrangement is that the dentist incorporates a management company. The company would be owned by himself and his wife, or some family

combination. The company would provide the dentist with office space, equipment, secretarial and nursing services, accounting services, etc at a fee equal to what the dentist would ordinarily pay for these services and facilities. The dentist would draw a certain income from the corporation leaving the surplus after paying all expenses to accrue to the corporation.

According to the present tax laws a business corporation will pay tax at the 25 per cent rate on the first \$50,000 net income. The individual will pay approximately 50 per cent tax on the same income. In addition to this obvious advantage, there can be other tax advantages beyond the scope of this report.

The particular case, upon which the precedential ruling referred to in the first paragraph was based, is as follows:

A doctor and his three partners set up a traditional type management company owned by them and their wives. The federal court overruled the Tax Appeal Board decision that the corporation was a sham to avoid tax and should not be granted small business tax advantages. The federal court said it was all perfectly legal.

The federal court ruling may establish an important precedent for those dentists who wish to incorporate. However, as has been pointed out many times, incorporation is not for all dentists. The actual decision, for or against, must be based on the needs of the individual practitioner and only after consultation with his legal and financial advisers.

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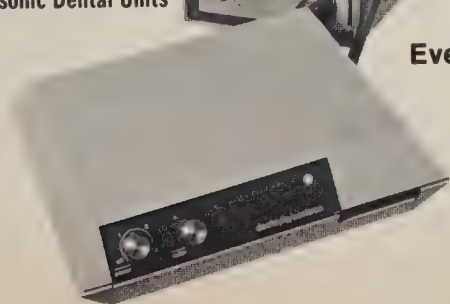
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The Association

CDA staff appointment

Jurij Bilyk of Toronto has been named public information officer for the Canadian Dental Association. In announcing the appointment, W.G. McIntosh, CDA executive director, explained that Mr. Bilyk will head up the Association's Bureau of Public Information and will be responsible for external communications with governments, news media and the public.



Jurij Bilyk

A graduate of Carleton University, Ottawa, Mr. Bilyk has seven years' experience in the field of public relations. He worked for the federal government as an information officer with the Department of Indian Affairs and Northern Development and, most recently, was information officer for the Dufferin-Peel County Separate School Board. Mr. Bilyk's appointment became effective February 1, 1973. He takes over the duties previously handled by Stephen Bitten who resigned recently.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan

stood as follows on January 31, 1973:

Guaranteed Fund \$9.999;

Fixed Income Fund \$13.778;

Common Stock Fund \$31.499.

Total assets (market value) of the plan were \$14,727,014.18.

The following portfolio purchases and sales occurred during the preceding month: bought \$75,000 Royal Trust GIR, 5,545 units CIF, 2,600 shares Fields Stores and 1,100 shares Zellers; sold 20,000 shares Celanese Canada Ltd, 10,000 shares Maclean-Hunter and 400 shares McIntyre Porcupine.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Canada and the Provinces

Low cost denture service main priority for Ontario dentists

Ontario's dental profession will give top priority status in 1973 to the delivery of low cost denture service.

Recent action taken by the provincial government with regard to legislation covering denturists makes it clear that the government will be looking to the dental profession to meet the public need for low cost dentures.

On December 16 the Ontario Legislature approved the Denture Therapists Act (Bill 246) and the Amendments to the Dentistry Act (Bill 204). Passage of the bills followed public hearings of the Legislature's Social Development Committee which heard from representatives of the Ontario Dental Association and the Royal College of Dental Surgeons. Members of the public and representatives of the Denturist Society also presented their views.

Bill 246 contains provisions essentially the same as those advocated by the ODA and requires persons practising denture therapy to meet certain qualifications and to work only under the supervision of a dentist. It replaces Bill 203 which, as introduced in the Legislature last June, would have allowed denturists to serve the public directly. The amendments to the Dentistry Act increase the penalties for illegal denture practice and also give the RCDS the responsibility of maintaining the roster of dentists who will provide low cost denture service.

The Ontario Dental Association's Board of Governors, along with representatives of a number of dental societies, met in Toronto in January to formulate plans for expansion of the low cost service program which has been in effect for the past 12 months. A province-wide publicity program to advertise the service is now under way and plans are being worked out to ensure that all sections of the province are adequately covered.

Saskatchewan proposal calls for children's dental care program

Saskatchewan's Department of Public Health recently submitted a report to the provincial government proposing that a dental program for children be introduced on a province-wide basis.

Basically, the report calls for dental services to be provided to all children in the province between the ages of three and 12. It consists of active preventive measures such as cleaning and scaling and the application of fluorides, supplemented by basic restorative procedures and extractions where necessary. An active dental health education program is also proposed to accompany these services.

Most of the services would be provided by New Zealand type dental

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nurses and dental assistants, with dentists providing "functional supervision." The proposal in the report with regard to "functional supervision" is that the regional dental consultant would visit a clinic one-half to one day each week. This would mean that, on average, the dentist would be required to supervise nine dental nurses and 21 certified dental assistants in each unit, or one dental nurse and two or three assistants in each delivery area. By whatever measure is used, the dentist, if he is to be responsible for the quality of care provided, will have to assume responsibility for several thousand children with an opportunity to see only about one-ninth of them during their course of treatment or on recall visits.

According to the information given in the report, a regional dental consultant would be responsible for approximately 3,300 children when the program begins in 1974. During the five years following, various age groups will be phased in until all children in the province between the ages of three and 12 are covered under the dental care plan. By 1978 a total of 140,000 children will be participating and each regional consultant will be responsible for approximately 11,600 children.

In addition to providing "functional supervision," dentists will also handle the more complicated problems referred to them by the dental nurses and assistants.

The "Proposal for a Dental Program for the Children of Saskatchewan" will be studied by a seven member Advisory Committee on Dental Care for Children which has been set up by the provincial minister of public health, Walter E. Smishek. Two members of the committee are dentists: K. J. Paynter, dean of the Saskatchewan College of Dentistry, is chairman and A. W. Geisthardt of Regina is vice-chairman.

The Advisory Committee has invited interested groups and individuals across Canada to study the province's proposed plan for a children's dental care program and to submit briefs. The Canadian Dental Association submitted a brief outlining its views on the proposal and W. G. McIntosh, CDA executive director, and F. T. Wihak of Regina appeared before the minister's advisory committee on February 21 to support the comments made in the Association's brief.

Dental Organizations

Society of Forensic Sciences establishes first section

At the 1972 annual meeting of the Canadian Society of Forensic Sciences in Ottawa the Society of Forensic Odontology was accepted as an odontological section of the CSFS. This is the first section to be established in the Society of Forensic Sciences which has 240 members. With the addition of the Society of Forensic Odontology, total membership now stands at 326.

Constitutional changes were accepted at the meeting allowing for other sections to be added in the future. The broadened purview of the CSFS is expected to stimulate a greater interest for all concerned. Details still to be resolved centre around membership categories and experience requirements needed to attain full membership.

K. B. Petersen, London, Ont., and Gordon Swann of Calgary were appointed to the Board of Directors. The odontological section will also appoint a member to the board.

The new odontological section of the CSFS plans to continue presenting group clinics at the CDA annual convention and to further the objectives of the FDI Council on Forensic Odontology to the benefit of each organization.

Academy of Periodontology has speakers available

The Canadian Academy of Periodontology has a number of clinicians across Canada who are available to speak on a variety of topics in the fields of periodontics and preventive dentistry. Interested groups wanting further information should contact: Dr. J. D. Stewart, 311 Rubidge St., Peterborough, Ont.

Dental Education

Western approves graduate program in orthodontics

The Faculty of Graduate Studies at the University of Western Ontario recently announced the introduction of

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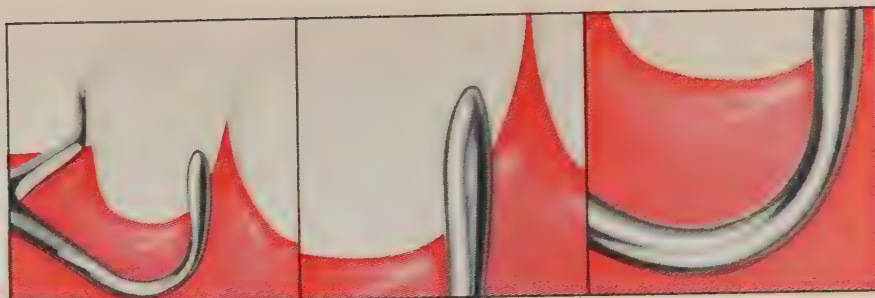
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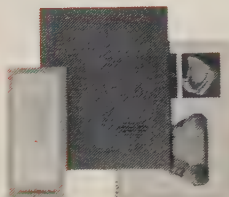
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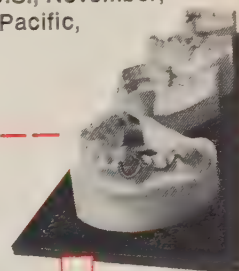
BIBLIOGRAPHY:

Clasp Designs for Extension Base Partial Dentures, Lectures presented by A. J. Krol, D.D.S., 22nd Annual Seminar of the Group of Dental Studies, U.S.C. de Mexico, May, 1969.

Removable Partial Denture Design, Outline Syllabus, A. J. Krol, D.D.S., November, 1972, University of the Pacific, School of Dentistry.



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<i>Dose Dalacin C</i>	<i>No. Patients</i>	<i>No. Bacteriologically Positive Blood Cultures Following Surgery</i>
Control Group (no antibiotic)	100	49
150 mg q.i.d. for 3 days before surgery	25	0
300 mg – 2 hours before surgery	75	4

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1. de Vries, J., et al. (1972). J. Canad. Dent. Assn., No. 2, p. 63.



Dalacin C

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- bactericidal against streptococci and staphylococci (including penicillin-resistant strains)
- well tolerated; hypersensitivity reactions are very infrequent
- available as capsules for adults and as a suspension for children

Indications: Dalacin C is indicated in Infections caused by organisms susceptible to its action, particularly streptococci, pneumococci, and staphylococci. As with all antibiotics, *in-vitro* susceptibility studies should be performed.

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Mild to moderately severe Infections: 150 mg (one capsule) every six hours.

Severe Infections: 300 mg (two capsules) or more every six hours.

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Average Infections: 10 mg/kg/day (5 mg/lb/day) divided into three or four equal doses.

Severe Infections: 16 mg/kg/day (8 mg/lb/day) or more if indicated by the clinical situation, divided into three or four equal doses.

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Children (over one month of age)

Average Infections: 12 mg/kg/day (6 mg/lb/day) divided into three or four equal doses.

Severe Infections: 20 mg/kg/day (10 mg/lb/day) or more divided into three or four equal doses.

Absorption of Dalacin C is not appreciably modified by ingestion of food and Dalacin C may be taken with meals with no significant reduction of the serum level.

Note: With β -haemolytic streptococcal infections, treatment should continue for at least 10 days to diminish the likelihood of subsequent rheumatic fever or glomerulonephritis.

Cautions: Generally well tolerated. Usual antibiotic side effects - abdominal discomfort, loose stools or diarrhoea, nausea, vomiting. Transient neutropenia (leukopenia), or abnormalities in liver function tests have been observed in a few instances. Mild hypersensitivity reactions (skin rash and urticaria) have been observed on rare occasions.

Use with caution in patients with a history of asthma and other allergies. As with other antibiotics, periodic liver function tests and blood counts should be performed during prolonged therapy.

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A Canadian travel company is presenting a special program and tour in conjunction with the International Dental Congress to be held in Victoria Falls, Rhodesia, July 31 to August 3, 1973. Theme of the congress is "Dentistry in the '70's." The tour will leave Montreal July 26, returning on August 17, and will feature visits to Salisbury, Victoria Falls, Johannesburg, Durban and Capetown. Also featured are trips to the famous Wankie Game Reserve, Rhodesia's largest national park, Kruger National Park and the Mbabane and Hluhluwe game reserves.

a 24 month course in orthodontics leading to the degree of Master of Clinical Dentistry (M C1 D).

The course will begin July 3, 1973, and will be given in the graduate facilities of the Faculty of Dentistry. Applicants must have a degree from a recognized dental school and preference will be given to those practising dentistry in Ontario.

Purpose of the program is to provide the academic background and clinical experience appropriate to the specialty of orthodontics as practised in North America and as recognized by the Canadian Dental Association and by the Royal College of Dental Surgeons of Ontario.

The program is under the direction of W. S. Hunter, DDS, PhD. Other orthodontic faculty members include: A. W. Eastwood, DDS, MS; D. C. Way, DDS, MS; and G. M. Dewis, BA, DDS.

For further information write to: Dr. W. S. Hunter, Faculty of Dentistry, University of Western Ontario, London, Ont.

Deaths

Derrick, John Holgate. Westcliffe-on-Sea, Essex, England. University College Hospital, London, England, 1953. June 1972. Survived by his wife.

Gibson, Stanley Hart. 65. Timmins, Ont. University of Toronto, 1938. 1-1-73.

Green, Francis Teweyck. 59. Burks Falls, Ont. University of Toronto, 1936. 1-1-73. Survived by his wife.

Kennedy, Ernest. 84. Banff, Alta. Northwestern University, 1912. 30-9-72. Survived by Josephine (wife) and Mrs. W. P. Charlton (daughter).

Screech, Eric Noel. 69. Victoria. Guy's Hospital, University of London, 1926. 29-1-73. Survived by his wife.

Stewart, Charles Elmer. 77. Hamilton, Ont. Royal College of Dental Surgeons of Ontario, 1919. 23-1-73. Survived by Ada (wife).

Van Loon, Alfred Nelles. 63. Tillsonburg, Ont. University of Toronto, 1933. 16-12-72.

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Le Canada

Le Code des professions et la formation des professionnels

La version réimprimée du projet de Code des professions (bill 250) déposé à l'Assemblée nationale, par le ministre des Affaires sociales du Québec, monsieur Claude Castonguay, maintient le principe de la protection du public comme fonction principale des corporations professionnelles.

Cette fonction de protection du public ne saurait aux yeux du gouvernement être efficacement exercée par les corporations professionnelles sans que celles-ci possèdent le contrôle de la délivrance des permis d'exercice d'une profession. Cela ne signifie pas cependant que les corporations professionnelles doivent avoir le contrôle sur l'ensemble des mécanismes de formation des futurs professionnels.

A cet égard, un sain équilibre doit être établi entre le rôle respectif des corporations professionnelles et des maisons d'enseignement, l'objectif visé étant de faire en sorte, dans la mesure du possible, que l'étudiant détenteur d'un diplôme collégial ou universitaire puisse avoir accès à l'exercice d'une profession sans que la corporation professionnelle en cause juge nécessaire d'ajouter des conditions additionnelles, tels que des stages, examens ou autres mécanismes d'évaluation avant de lui octroyer son permis d'exercice.

Un équilibre délicat

Le projet de Code des professions déposé prévoit, à l'instar de la version initiale, qu'à l'intérieur du Québec, ce sera le lieutenant-gouverneur en conseil qui reconnaîtra les diplômes donnant ouverture à un permis d'exercice ou à

un certificat de spécialiste ainsi que les maisons d'enseignement pouvant décerner de tels diplômes. Pour ce qui est des diplômes décernés par des maisons d'enseignement situées à l'extérieur du Québec, cette reconnaissance se fera par la corporation professionnelle en cause.

De façon à faire en sorte que les corporations professionnelles acceptent généralement d'octroyer des permis d'exercice sur la seule foi des diplômes donnant ouverture à un permis ou, du moins, de favoriser une telle situation, le projet déposé prévoit le mécanisme suivant: le lieutenant-gouverneur en conseil déterminera par règlements, après consultation de l'office des professions, du conseil des universités, des établissements d'enseignement et de la corporation intéressée, les modalités de la collaboration des corporations avec les autorités des établissements d'enseignement du Québec, dans l'élaboration des programmes d'étude conduisant à un diplôme donnant ouverture à un permis ou à un certificat de spécialiste et dans la préparation des examens ou autres mécanismes d'évaluation des personnes effectuant ces études.

Toutefois, le projet déposé prévoit qu'une corporation professionnelle qui jugera encore nécessaire, même après l'application de ce mécanisme, de fixer des conditions additionnelles s'ajoutant au diplôme donnant ouverture à un permis d'exercice, tels des stages ou examens, pourra le faire. A cette fin, elle devra adopter un règlement qui, cependant, comme tout autre règlement de la corporation, devra recevoir l'approbation du lieutenant-gouverneur en conseil.

Le projet de loi sur la santé publique a été retouché

Le ministre des Affaires sociales, monsieur Claude Castonguay, a déposé de

nouveau à l'Assemblée nationale récemment le projet de loi intitulé "Loi de la protection de la Santé publique".

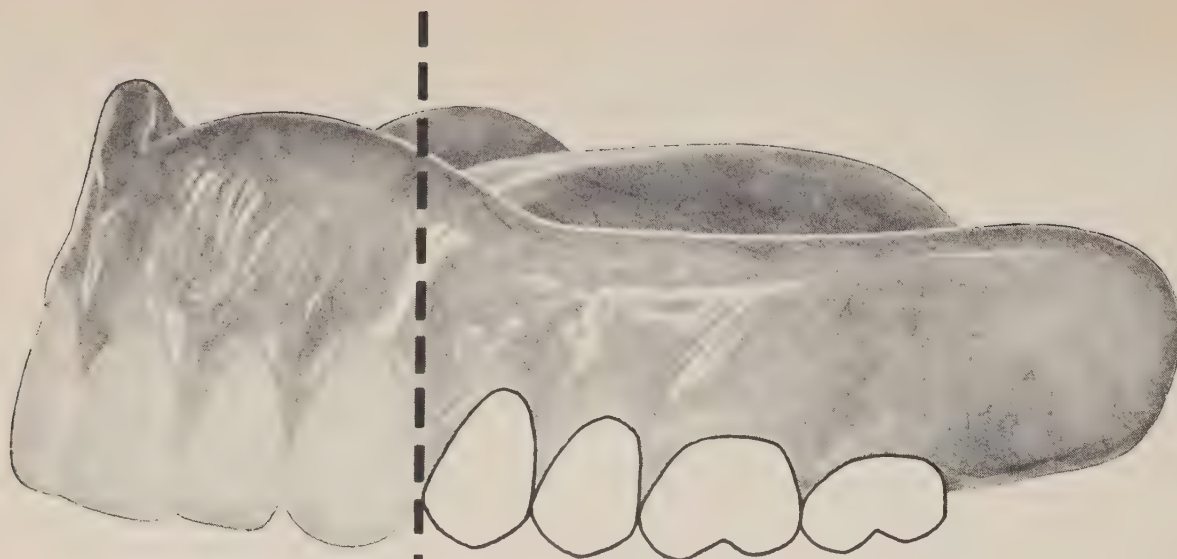
Ce projet avait été adopté en première lecture avant l'ajournement de la session en juillet dernier et le nouveau texte soumis récemment, sans changer l'orientation générale de la loi, comporte des ajustements susceptibles de faciliter son application.

Le texte soumis à l'Assemblée nationale est une refonte de la Loi de l'hygiène publique qui, lorsque complétée par le projet de Loi sur la qualité de l'environnement, partagera clairement la responsabilité propre à la protection de la personne et celle relative à la protection de son environnement.

Le projet déposé en juillet dernier permettait au lieutenant-gouverneur en conseil de dresser une liste des maladies à déclaration obligatoire, à immunisation obligatoire et à traitement obligatoire. Le nouveau projet propose que cette liste soit dressée en consultation avec le Bureau provincial de médecine, organisme qui succèdera au Collège des médecins en vertu du projet de loi concernant le code des professions et les corporations professionnelles dans le domaine de la santé. De nouvelles dispositions veulent également assurer davantage la confidentialité des renseignements transmis au ministre dans ces cas de maladie.

Une autre modification importante prévoit un délai de quatre-vingt-dix jours entre la publication des règlements et leur entrée en vigueur. Ce délai permettra aux organismes intéressés de pouvoir discuter de ces règlements et de les faire modifier au besoin.

Quatre nouveaux pouvoirs de réglementation sont accordés au lieutenant-gouverneur en conseil. Ces pouvoirs portent sur la condamnation de locaux d'habitation insalubres; le contrôle de la qualité des médicaments; la nécessité de combattre les invasions de bestioles pouvant être dangereuses pour la santé publique; la disponibilité, pour le pu-



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blic, d'un carnet de santé individuel à des fins médicales.

Pour les cas d'enquête dans des établissements qui opèrent avec un permis du ministère, une modification propose que les enquêteurs soient munis d'une autorisation spécifique chaque fois qu'ils se présentent dans un établissement et non plus d'une autorisation générale et permanente.

Notons enfin qu'aux dispositions concernant le transport des cadavres hors du Québec s'ajoute, pour la première fois, une disposition sur leur entrée au Québec.

Besoins dentaires mis en évidence par une étude en Nouvelle-Ecosse

Une étude inaugurée récemment à Sherbrooke, Nouvelle-Ecosse, se propose de recueillir pour le gouvernement des renseignements sur le type de demandes de soins dentaires qui caractérisent les agglomérations ne disposant pas des services d'un dentiste résident.

L'emprunt de la clinique itinérante de l'Université Dalhousie a permis de mettre cinq chaises à la disposition du public à l'école secondaire de Sherbrooke, durant le mois d'octobre. Cinquante-deux dentistes offrirent leurs services et ceux de leurs assistants pour la réalisation de ce projet. Des soins furent prodigués à tous ceux qui en firent la demande.

La clinique a reçu environ 1,000 visites durant les 23 jours ouvrables du mois. Plus de la moitié des patients étaient âgés de moins de 16 ans. L'étude a permis de recueillir des données intéressantes qui seront utiles dans les discussions futures avec le gouvernement touchant la distribution des services dentaires.

Chronique internationale

Poursuites intentées contre la publicité denturologique à la radio

Le ministre de la Justice de l'état de New-York a entamé des poursuites contre la Dentures Unlimited de Kingston, Ontario, une firme denturologique qui utilise la radio dans l'état de New-York pour annoncer ses services.

Les autorités croient que les représentants de la firme n'iront pas défendre leur cause dans l'état de New-York. Il est probable qu'une injonction interdira toute publicité future dans cet état. Cette mesure pourra entraîner à l'avenir les autres médiums de diffusion à refuser la publicité des firmes de denturologistes.

La mesure prise par le ministre de la Justice reposait sur des renseignements provenant du service du contentieux de la Société dentaire du comté de Jefferson, concernant les stations de radio en cause. De plus, ce service a révélé l'existence de mesures légales permettant d'annuler les contrats déjà existants avec les firmes denturologiques.

Le Conseil de la recherche de l'ADA étudie l'acupuncture

Durant ses assises de la mi-novembre, le Conseil de la recherche dentaire de l'Association dentaire américaine a étudié l'application de l'acupuncture pour combattre la douleur.

Bien que le programme de cette session comportait la recherche sur les aspects généraux de la douleur et des moyens de la maîtriser, la majeure partie des discussions fut consacrée à l'étude des techniques de l'acupuncture, à cause de l'avalanche récente de demandes de renseignements en provenance des membres de la profession et du public en général. De plus, le Conseil est à mettre au point une déclaration de l'Association sur la nature et l'usage de l'acupuncture en dentisterie.

Le Conseil a tenu une réunion aux quartiers généraux de l'ADA et au Centre médical Rush-Presbyterian St. Luke où l'acupuncture fait l'objet d'études suivies depuis six mois. Une équipe médicale sous la direction du département d'anesthésiologie a procédé à l'évaluation à long terme de cette technique pour combattre la douleur chez plusieurs patients.

Les membres du Conseil ont pu observer le traitement de plusieurs patients atteints de névralgie du trijumeau. L'équipe du docteur Sadove a commencé ses travaux au début de 1972, n'utilisant d'abord que des aiguilles pour n'appliquer finalement, chez certains patients, que des traitements électriques à la surface de l'épiderme.

Le docteur Sadove a révélé que l'état d'un nombre imposant de patients traités au moyen de l'acupuncture traditionnelle a semblé s'améliorer, ou s'est réellement amélioré. Entre les traitements administrés aux patients, plusieurs membres du Conseil ont expérimenté l'acupuncture à titre de démonstration.

Organisations dentaires

Le programme dentaire pour les enfants se poursuit avec succès à Terre-Neuve

L'Association dentaire de Terre-Neuve vient d'annoncer que le programme dentaire pour les enfants, qui entame sa seconde année d'activités dans la province, se poursuit avec succès.

L'an dernier le gouvernement provincial accorda plus d'ampleur au programme dentaire gratuit afin d'y inclure les traitements à tous les enfants jusqu'à l'âge de 10 ans. Ce changement, joint au manque de dentistes à Terre-Neuve, a créé immédiatement une augmentation des soins réclamés auprès de chaque dentiste. Toutefois, la situation est maintenant rentrée dans l'ordre alors que chaque dentiste a réussi à s'adapter à un programme de travail plus intense.

La fluoration

Retrait du projet de loi sur la fluoration

Devant la résistance de certains milieux, le ministre des Affaires sociales, M. Claude Castonguay, a décidé de surseoir à son projet de loi sur la fluoration des eaux de consommation.

Présenté l'été dernier à l'Assemblée nationale, ce projet de loi (bill 31) visait à généraliser l'usage du fluorure dans toutes les municipalités du Québec. Cette mesure, selon les études du ministère, n'aurait coûté que \$0.09 par tête et aurait diminué de moitié le coût des services dentaires.

Le projet de loi a cependant été dénoncé dès son dépôt en Chambre par les créditistes comme "une atteinte à la liberté des individus". Le maire de

Montréal, M. Jean Drapeau, s'y est également opposé de façon catégorique et, par la suite, certains organismes ou individus ont brandi l'épouvantail de la pollution par les fluorures.

Lors d'une conférence de presse, M. Castonguay a déclaré que la population n'est pas prête à accepter une telle mesure. Il a donc décidé de remettre à plus tard son projet tout en poursuivant ses efforts d'éducation populaire en ce sens.

Soins dentaires

Le projet de loi permettait la tenue d'un référendum dans les municipalités où au moins 10 pour cent des usagers se serait opposé à une telle mesure. Cette opposition devait être appuyée par la moitié de la population pour permettre à une municipalité de ne pas se conformer au bill 31.

Le ministère escomptait avec cette mesure que 65 pour cent de la population du Québec bénéficierait d'eau de consommation fluorée dans un délai d'un an.

M. Castonguay avait maintes fois relié ce projet de loi au régime de soins dentaires pour les enfants de 0 à 7 ans qui doit être mis sur pied au cours des prochains mois.

"Le retrait du projet de loi sur la fluoration ne remettra cependant pas ce programme en cause", a déclaré le ministre.

Les négociations se poursuivent avec les dentistes. Elles sont particulièrement compliquées par le fait qu'il s'agit d'un projet tout à fait inédit et que les points de comparaisons sont difficiles à établir.

Impatience

Ce régime devait être en vigueur dès le mois de janvier. Le ministre n'a pas caché son impatience devant la lenteur des négociations qui se poursuivent depuis plusieurs mois avec l'Association des chirurgiens dentistes.

Il a confié que ces pourparlers donnent lieu à des "divergences assez profondes". Mais il a en même temps annoncé que son ministère "prendra

des décisions au cours des prochaines semaines, s'il n'est pas possible de procéder par voie d'ententes négociées".

La loi sur les soins dentaires a été adoptée à l'Assemblée nationale en juin 1971. Le ministère a négocié avec les dentistes au cours de 1972 les règles d'application de ce régime, les tarifs et autres questions techniques.

Les questions monétaires n'ont été abordées qu'à la fin de l'année et c'est sur ce point que les négociations ont donné lieu à des divergences.

Quant à la fluoration des eaux, M. Castonguay estime regrettable qu'il ait été "assez facile de faire croire à la population, avec un petit peu de démagogie, qu'on allait lui faire prendre contre son gré une substance dangereuse".

Nouvelles normes pour assurer la qualité des eaux minérales

Le ministre responsable de la qualité de l'environnement, monsieur Victor Goldbloom, a décidé, après consultations auprès du gouvernement fédéral, d'abandonner l'idée d'interdire la vente des eaux minérales contenant des quantités importantes de fluor.

M. Goldbloom avait déjà évoqué il y a trois semaines la possibilité que le Québec interdise dans un avenir prochain la vente des eaux minérales ne correspondant pas aux normes canadiennes.

M. Goldbloom avait soulevé cette possibilité à l'occasion d'un reportage publié dans *La Presse* sur la qualité des eaux minérales vendues au Québec. Ce reportage avait révélé qu'au moins sept des 50 marques d'eaux minérales en vente au Québec contenaient nettement plus de fluorure que ne le permet une loi fédérale.

Au cours de sa déclaration faite à l'Assemblée nationale, M. Goldbloom a confirmé ces chiffres et ajouté qu'un dossier renseignant la population à ce sujet sera rendu public dès cette semaine.

La publication de ce dossier et de certains "conseils" sera le seul geste que posera le gouvernement en vue d'empêcher le public d'acheter des eaux

minérales contenant des quantités importantes de fluor.

Dans le cas des eaux minérales à forte teneur en fluor, le conseil du gouvernement donné aux consommateurs sera de ne boire "que deux verres par jour".

En plus de ce dossier sur les eaux minérales, M. Goldbloom rendra publique une liste de toutes les municipalités qui ajoutent du fluor à leurs eaux de consommation.

Toujours au sujet des eaux minérales qui depuis le mois d'avril dernier font l'objet d'une inspection deux fois par mois, M. Goldbloom a fait savoir que le gouvernement fédéral exigera, à partir du 31 janvier, un étiquetage sur les bouteilles indiquant la teneur en fluor et en minéraux.

Quant aux résultats des analyses de son ministère, M. Goldbloom a dit qu'elles ont permis de déceler une contamination microbienne dans le cas de quatre marques. Dans trois cas précis, la situation serait maintenant corrigée et le travail se poursuit en vue de régler la situation pour la quatrième marque.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 janvier 1973:

Fonds avec garantie \$9.999;

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Fonds d'actions ordinaires \$31.499.

L'avoir total (valeur marchande) du régime se montait à \$14,727,014.18.

Au cours du mois précédent, les transactions ont été les suivantes: achat \$75,000 Royal Trust GIR, 5,545 CIF, 2,600 actions de Fields Stores et 1,100 actions de Zellers; vente 20,000 actions de Celanese Canada Ltd, 10,000 actions de Maclean-Hunter et 400 actions de McIntyre Porcupine.

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1. Suomi, J.D. et al.: J. Periodont. 42:152-160, March, 1971.

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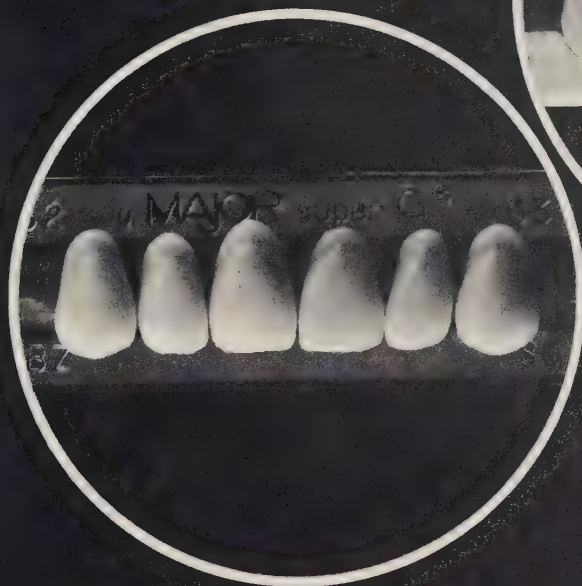
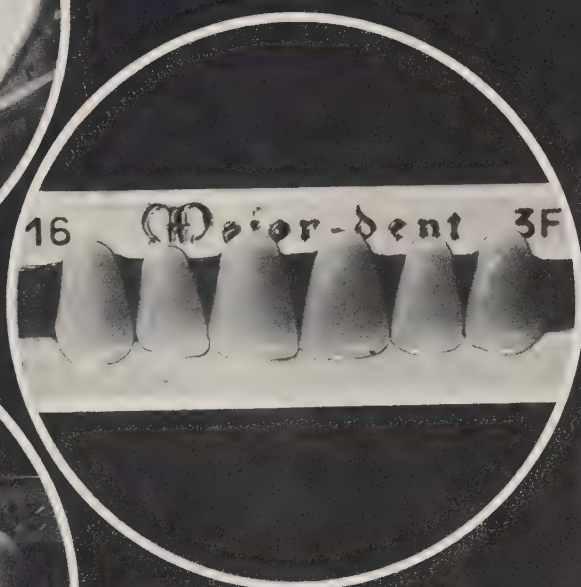
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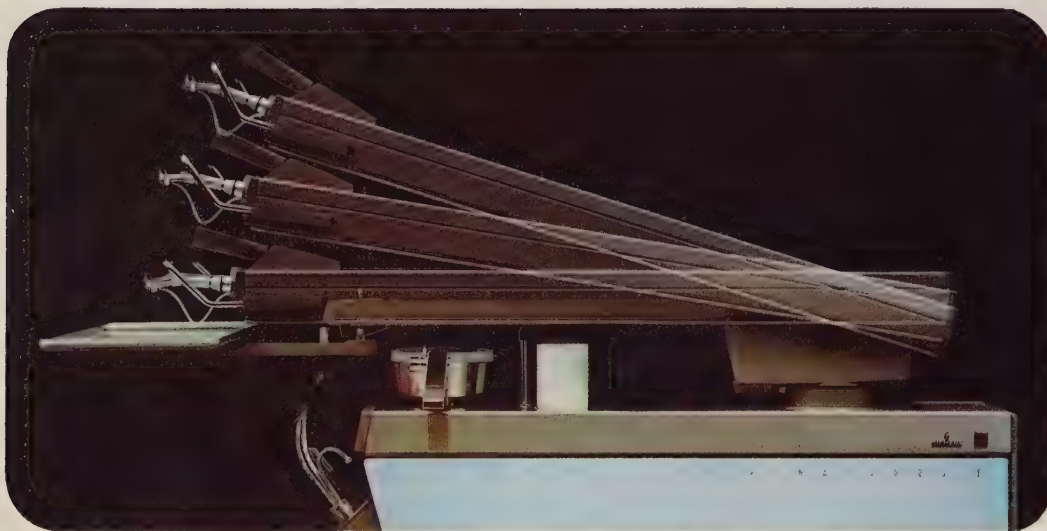
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CDA Caribbean Dental Program



Dr. George Burgman, assisted by his wife Barbara, examines a young patient in the Montserrat Hospital Dental Clinic.

George E. Burgman

The CDA Caribbean Dental Program offers an exciting challenge to Canadian dentists with a sense of adventure and a willingness to explore new horizons.

The program is based on the simple concept of supply and demand. The demand comes from developing countries where sophisticated dental services are sadly lacking and where advice, guidance and treatment are needed. Canada is in a position to meet this demand by sending qualified dentists to these areas on short-term assignments. Since 1970 the Canadian Dental Association has provided the necessary bridge linking up this supply and demand operation.

The Caribbean Dental Program is administered by the CDA and supported by a grant from the Canadian International Development Agency. Originally,

the program was administered by the Canadian Executive Service Overseas, an organization involved in supplying specialists in a wide range of business and professional areas to developing countries. However, since dentistry is a very specialized profession, and CESO had to consult the CDA with regard to each placement of a dentist, it was deemed more advantageous to turn the administration of the program over to the national association.

At the present time the CDA Caribbean Dental Program sends volunteer Canadian dentists to the Caribbean islands of Montserrat and St. Lucia. The terms of the program are as follows: (1) the country requesting assistance is to supply food, accommodation and transportation connected with the work of the volunteer; and (2) the CDA, through the grant from CIDA, pays the economy return air fare and other related expenses concerning travel.

The program first started in late 1968 when letters were sent to a number of Caribbean islands at the request of CESO. The letters were inquiries as to whether any of the islands would be interested in obtaining the service of dentists under the CESO terms of reference (the same as those outlined above).

In January, 1969 I was going to St. Lucia where I had made arrangements on my own to serve as a volunteer. The CDA asked me to investigate the general dental health status of people on the island and the attitude of the St. Lucian government toward the prospect of assistance in this area. Later in 1969 CESO sent a Health and Education Survey Team to the Caribbean. I was on this team as a representative of the CDA, along with the secretary of the Canadian Medical Association, the secretary of the Canadian Teachers Federation and a member of the Canadian Executive Service Overseas. We visited 11 English-speaking Caribbean islands with the intent of surveying their needs in each of our various areas of specialization.

Our first official volunteer was Dr. Gordon Shillington, an Ontario dentist, who went to Turks and Caicos Islands in July, 1970. His month on these islands allowed the local dentist to take a long overdue holiday. In January, 1971 we sent our first volunteer to St. Lucia and in December, 1971, to Montserrat. To date there have been 13 volunteers in St. Lucia, with a fourteenth arriving in March, and volunteers have been signed up for the next six months. On the island of Montserrat, we have had eight volunteers with a ninth arriving in March and are booked six months in advance.

St. Lucia

The beautiful island of St. Lucia, with its rolling hills, is 14 miles wide and 27 miles long. St. Jude

Hospital, where our volunteers serve, is on the southern tip of the island, near the town of Vieux Fort with a population of approximately 8,000. The total population of the island is around 100,000. There are three permanent dentists in the capital city of Castries in the northern section of the island.

St. Jude is a 100 bed hospital which serves about 40,000 people. Since it is the headquarters for volunteer specialists in the medical field, its services are in demand throughout the island. The dental clinic at St. Jude's has been in existence for some time now, but it was previously operational for only

about five months of the year staffed by volunteer dentists from the United States. The CDA hopes, through its Caribbean Dental Program, to keep the clinic open all year round for the benefit of the people of Vieux Fort and any others on the island requiring dental treatment.

Although the equipment in the clinic is antiquated, it has nevertheless served the volunteers well in providing basic dental services. We have made a good start on the road to better dental health for the people of St. Lucia. But we are only scratching the surface; there is still much to be done.

Montserrat

The island of Montserrat, 27 miles south of Antigua, is seven miles wide and 11 miles long. Like St. Lucia, it is of volcanic origin and mountainous. Montserrat's airport is on the east side of the island and the main city of Plymouth is situated on the Caribbean side. Since the island is a dependant of Great Britain, it has a British administrator presiding over its affairs, along with an executive council headed by an elected chief minister who is a Montserratian.

The dental clinic is in a separate building on the Glendon Hospital grounds and is under the supervision of the hospital's chief medical officer, who is directly responsible to the Minister of Health, Welfare and Social Services, the Honourable Mrs. Tuitt.

In Montserrat volunteers are there at the request of the government, not just the hospital as in St. Lucia. Volunteer dentists are housed in a four room residence overlooking the Caribbean. Although volunteers find a number of refinements might be lacking, they are generally well able to cope with the various problems which might arise. While the hospital is not in the vicinity of the volunteer's housing, transportation has been arranged for the volunteer to the hospital.

Volunteers to both islands should plan to include the cost of renting a car in their budgets. This will be a great convenience in getting to and from the beautiful beaches along the west coast.

What's in it for the volunteer? The personal gratification that comes from serving in a very worthwhile endeavour, plus the immeasurable educational value he and his family will receive from sharing in another culture. There is always a personal cost involved for any of our members who volunteer, but the experience they gain is well worth it.

For more information on the Canadian Dental Association Caribbean Dental Program contact the Program Chairman, Dr. G. E. Burgman, 5709 Main St, Niagara Falls, Ont.



St. Jude Hospital, St. Lucia.

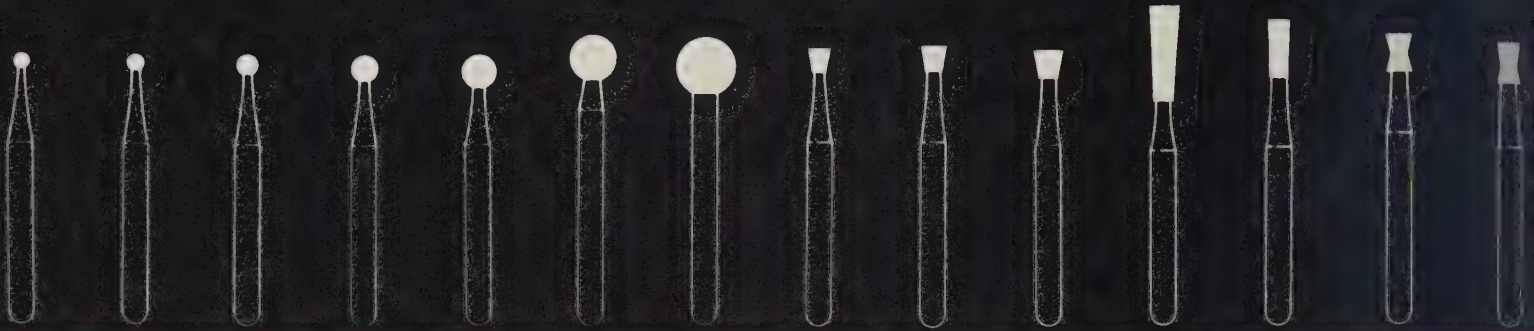


Dr. G. E. Burgman, Chairman of the CDA Caribbean Dental Program, and an assistant, William Joseph, at the St. Jude Hospital Dental Clinic, St. Lucia.

Montserrat Hospital Dental Clinic.



performance



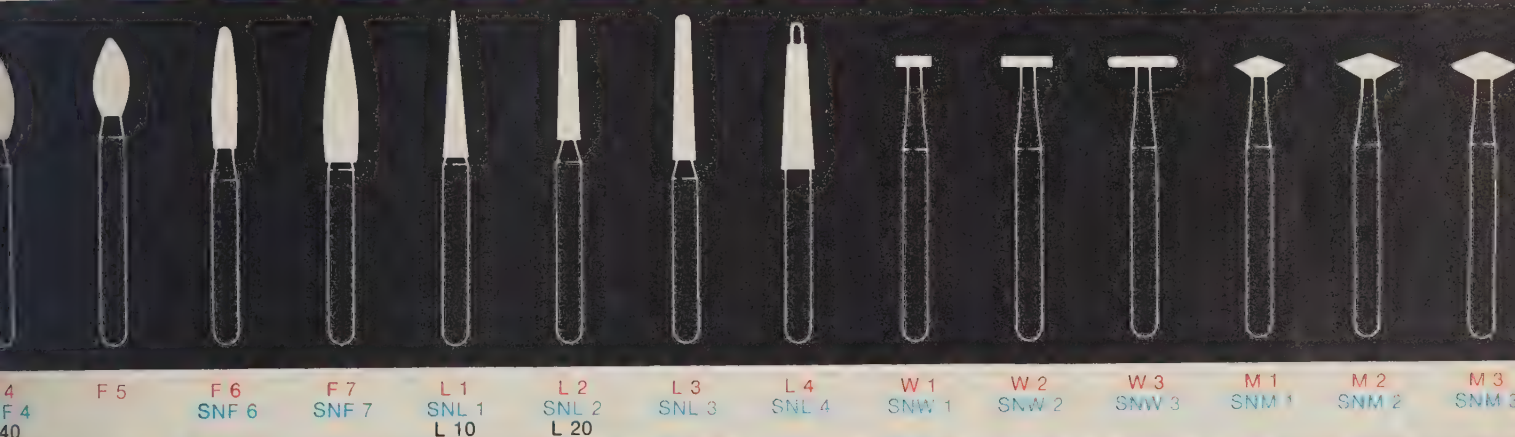
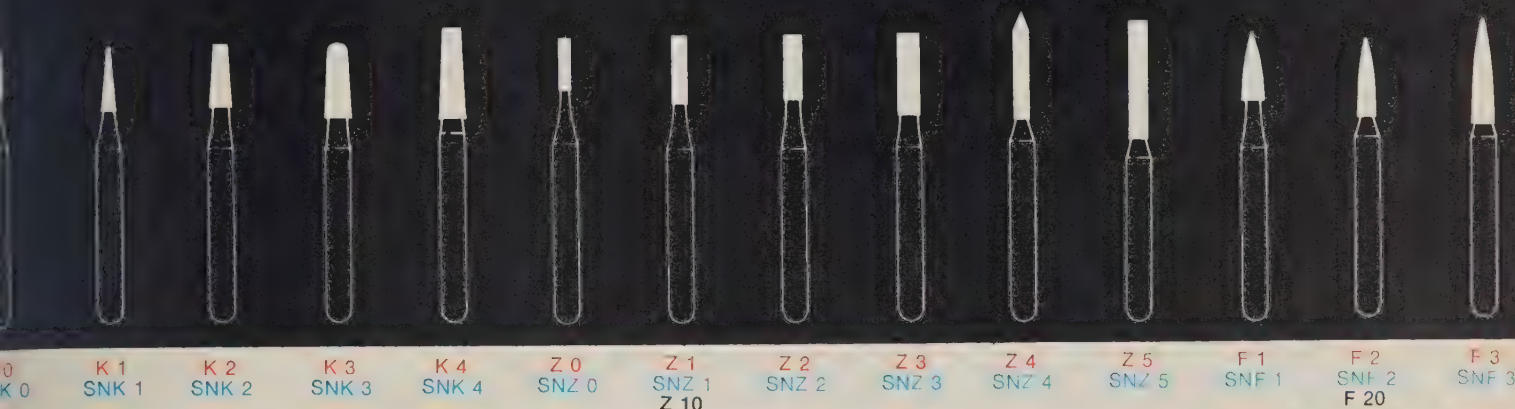
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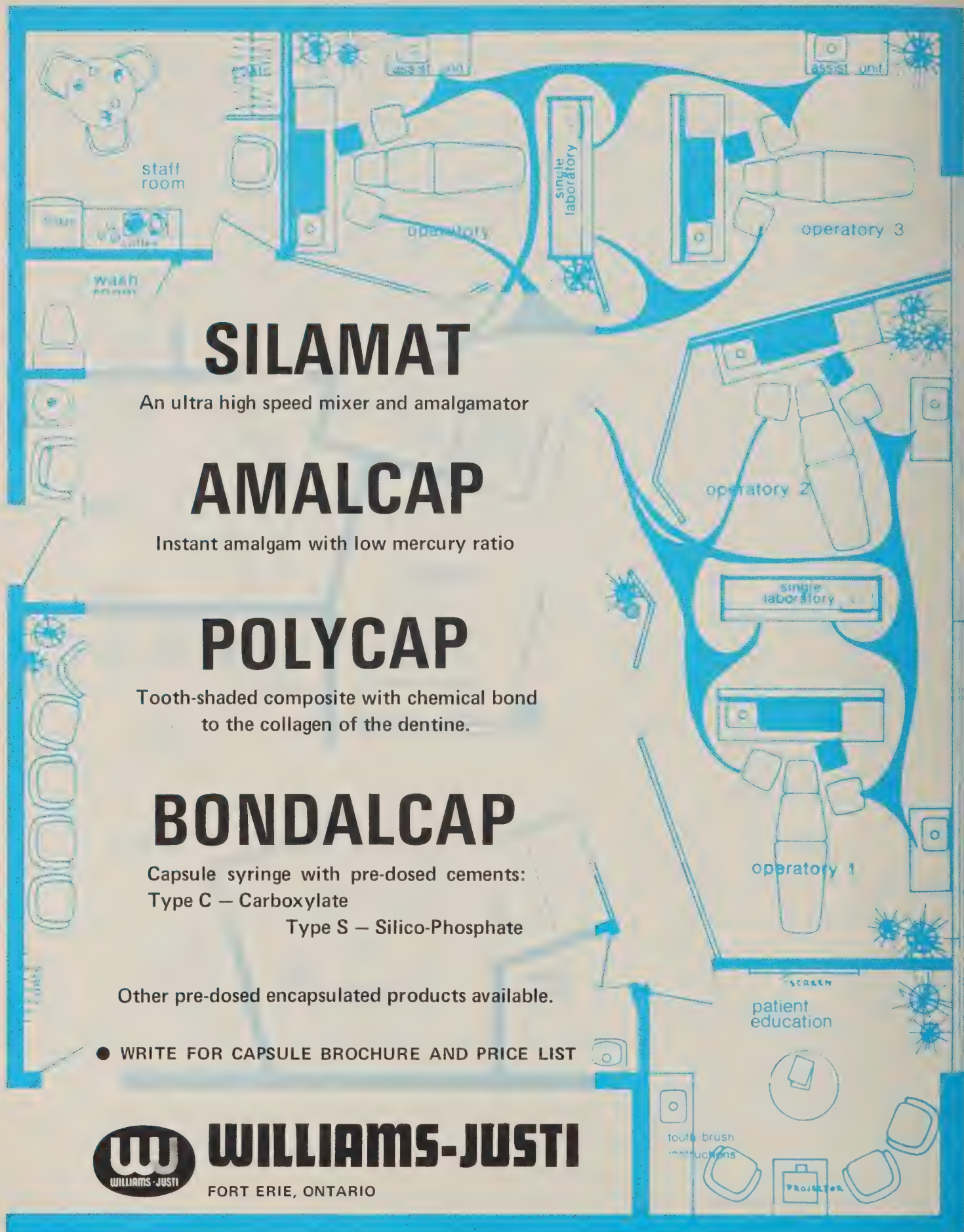
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Enhancement of salivary flow rate and buffering capacity

I. L. Shannon, DMD, MSD
W. J. Frome, DDS
Houston, Texas

This study compares the salivary flow rate produced by a sugarless gum containing nonfermentable sorbitol and mannitol with that elicited by sugared gums and with unstimulated flow. It was found that chewing either type of gum elicited highly significant increases in rate of flow, pH and buffer capacity values. Flow rate induced by the sugarless gum was significantly higher than that of the sugared gum.

L'étude suivante compare le taux de salivation provoqué par une gomme à mâcher non sucrée contenant du sorbitol et du mannitol non fermentescible à celui qu'entraîne des gommes à mâcher sucrées et une salivation non stimulée. Les auteurs ont découvert que le fait de mâcher l'une ou l'autre gomme provoquait une augmentation significative de la salivation, du pH et de l'effet tampon. Le taux de salivation causé par la gomme à mâcher non sucrée apparut plus élevé, de manière significative, que celui de la gomme sucrée.

A preventive dentistry program for astronauts has been developed in response to the specific requirements for manned space flight. One product of research in this area has been an ingestible dentifrice that is highly effective when used with a toothbrush in cleaning the teeth.¹⁻³ This dentifrice has been employed on all manned space and lunar missions and is used in Veterans' Administration hospitals throughout the United States for maintaining oral health in severely handicapped patients.⁴

Because of the short duration of Mercury, Gemini and Apollo space flights, possible demineralization of the teeth has not been a primary concern. Now that flights involving prolonged absence from the earth environment may be realistically envisioned, the prevention of loss of tooth mineral comes more clearly into focus as a problem to be considered. A program of frequent application of low concentrations of stannous fluoride has been developed to partially fill this requirement. However, other beneficial approaches that promote oral health continue to be explored. One is the enhancement of salivary flow.

Both physically and chemically, vigorously flowing saliva exerts beneficial effects on the oral environment. A very effective way to elicit a high rate of salivary flow is by using chewing gum. This approach is not without potential problems since the gum formulation may include components that could be harmful to the teeth. Finn and Jamison,⁵ in a study of 416 children over a 30 month period, found that subjects chewing sugarless gum had significantly less decay than those who chewed sugared gum. The implication is that chewing gum containing sugar is harmful. Although the study omitted a control group chewing no gum, present knowledge of caries initiation would indicate that adding sugar to chewing gum is not without hazard.

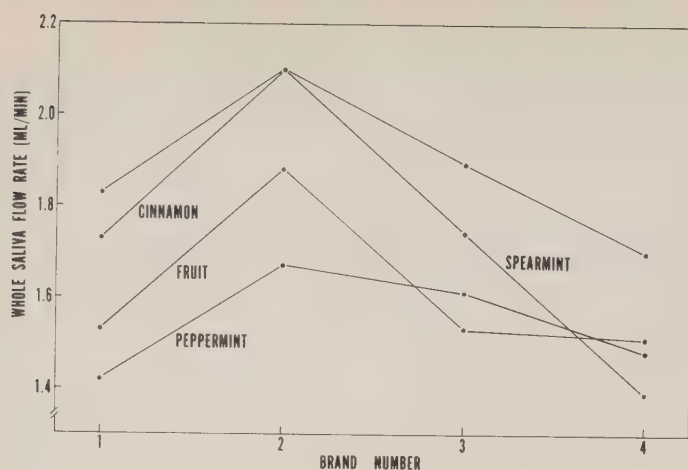


Fig 1 Salivary flow elicited by various gum formulations.

An important observation in the above study⁵ was that, regardless of the type of gum chewed, the posterior tooth surfaces were unusually clean, even in the interproximal areas, whereas the upper anterior teeth did not appear as clean. Although these children had not received prophylaxis for one year, their posterior teeth were clear of calculus and plaque. The investigators attributed this to either the cleansing action of the gum or an increased salivary flow elicited by gum-chewing or to a combination of both.

To preserve the beneficial effects of increased salivary flow elicited by chewing gum and to negate the potential hazards, sugarless gums have been developed and have now assumed a significant position in the commercial market. The present study concerns salivary flow rates produced by sugarless gums compared to unstimulated flow and to flow elicited by sugared gums. The pH and buffer capacity of saliva elicited by these methods were also measured.

Materials and methods

Subjects in the first two experiments were five dental students who had provided saliva samples five days per week for more than one year preceding this study. All subjects were fasting when sampling began at approximately 7:00 am each day.

In the initial experiment each subject provided a daily 45 minute whole saliva sample for 10 days. Close supervision prevented extraneous interferences and assured that the subjects remained awake and alert. No exogenous stimulation was employed.

In the second experiment four commercially available brands of sugarless chewing gums were tested. Bolus size was 1.5 Gm for all gums and the

gum bolus was replaced with fresh gum at five minute intervals. A five minute accommodation period was allowed after presenting the fresh gum and prior to collecting the 10 minute saliva specimen. Each subject rinsed his mouth thoroughly with water after collecting the test sample. Testing was confined to a single flavour per day but all subjects tested all four brands on all days. Each flavour of the four brands was tested on two days by the five subjects. Thus, 10 values were available for each flavour of each brand of gum.

The final experiment tested both sugared and sugar-free gums.⁶ One commercial company sells both a sugared chewing gum and a gum of similar stick size which contains sorbitol and mannitol rather than sugar. This afforded an opportunity to compare sucrose to sorbitol-mannitol in the generation of salivary flow. Two hundred subjects participated in this phase of the study. Two groups of 50 subjects each (groups 1 and 2) first provided three successive five minute whole saliva samples while chewing a single stick of sugarless gum. Each then rinsed his mouth well with water during a 10 minute rest period. Immediately thereafter the subjects provided three successive five minute samples while chewing a single stick of sugared gum. Groups 3 and 4 provided the same number of samples but collected the first three samples with sugared gum and the final three with the sugarless formulation.

Volume was read to the nearest 0.05 ml in graduated collection tubes and flow rate was calculated in ml/min. In all instances appropriate precautions were taken to prevent carbon dioxide loss from the saliva samples. The pH was measured with a Beckman Research pH meter. Buffer capacity was estimated by a modification of the method of Dreizen et al.⁷ The values are reported as the number of ml of 0.1 N lactic acid required to titrate 5.0 ml of the sample to pH 6.0.

Results

For the 50 unstimulated whole saliva samples the mean rate of flow was 0.322 ml/min (SD = 0.127), the mean pH was 6.54 (SD = 0.19) and the mean buffer capacity was 0.31 ml (SD = 0.10).

Whole saliva flow elicited by different flavours of four brands of sugarless gum is presented in Figure 1. In general, brand 2 elicited the highest flow rate, brands 1 and 3 provided intermediate flow rates and brand 4 was the least productive. However, the only statistically significant difference occurred between brand 4 (1.39 ml/min) and brand 2 (2.10 ml/min) when spearmint was the flavour under test. The grand mean for flow rate

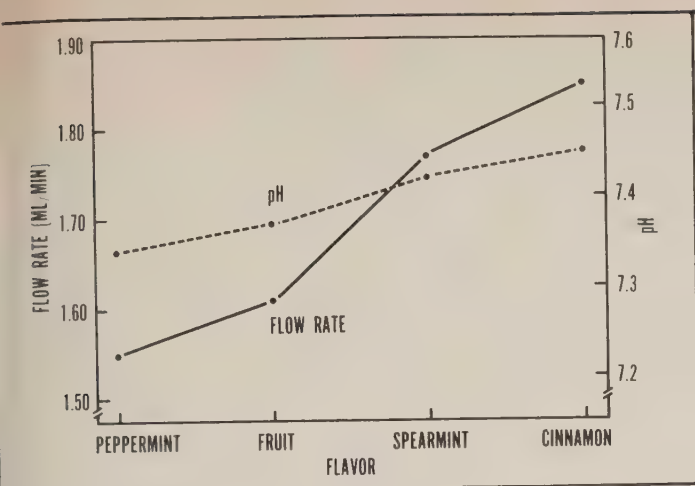


Fig 2 Effect of different flavours on whole saliva flow rate and pH (four brands pooled).

for all flavours of all brands was 1.69 ml/min (SD = 0.57).

Flow rate responses to each flavour, with the four brands of gum pooled, are shown, along with pH means, in Figure 2. The flow rate elicited with cinnamon flavoured gums was significantly higher ($P < 0.05$) than that obtained with peppermint flavoured formulations but not with fruit or spearmint formulations. The pH mean of 7.34 for peppermint samples was significantly less than that of 7.42 for spearmint and 7.45 for cinnamon. The cinnamon mean was significantly higher than that of 7.37 found for the fruit-elicited samples.

Figure 3 plots the flow rate and the buffer capacity means. The buffer capacity mean of 0.52 ml for the peppermint samples was significantly less ($P < 0.01$) than those of 0.62 ml and 0.67 ml for the spearmint and cinnamon stimulated samples. The mean for the fruit flavour, 0.58 ml, was also significantly lower ($P < 0.01$) than the cinnamon mean.

Rates of saliva flow elicited by sugarless and sugared chewing gum are outlined in Table 1. With all formulations there was a significant decrease in flow in the second and third five minute samples collected with the same gum bolus. When overall means on each type of gum were calculated for the three five minute samples, the sugarless gum means were 1.833, 1.338 and 1.271 ml/min, respectively. Comparable values for sugared gum were 1.684, 1.194 and 1.171 ml/min. Thus, for the three successive samples the flow mean for sugared gum was 92, 89 and 92 per cent, respectively, of that for the sugarless formulation. When the statistics included all 600 samples from the 200 participants the flow rate mean for sugarless gum was 1.481 ml/min. The mean for the sugared preparation was significantly less at 1.350 ml/min.

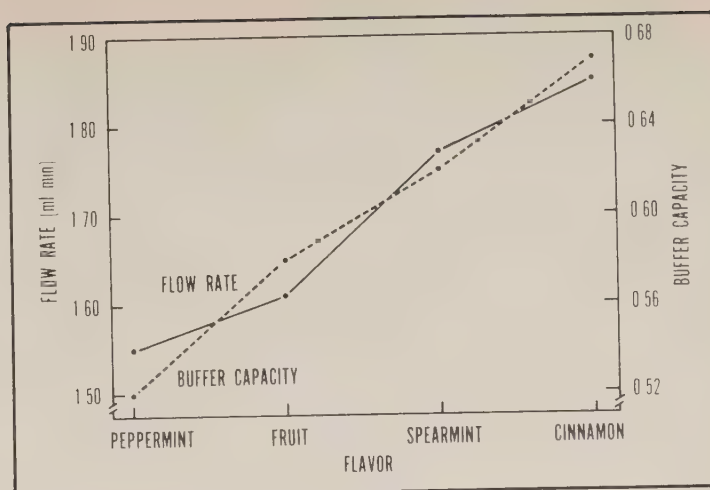


Fig 3 Effect of different flavours on whole saliva flow rate and buffer capacity (four brands pooled).

Discussion

Saliva is of paramount importance in protecting teeth from dental disease. One has only to observe the ravaging form of caries associated with the xerostomia following irradiation therapy of the head and neck to be convinced that this is true. It has also been pointed out that healthy young adults with the least degree of caries experience (DMFS 0-10) had significantly higher rates ($P < 0.025$) of unstimulated parotid flow than did their more severely afflicted colleagues.⁸ Since debris retention on the tooth surface predisposes to caries, it would follow that the higher the rate of salivary flow, the lower the retention factor. Saliva thus protects the teeth in this purely physical sense.

There are also chemical considerations in saliva's protective function. The intra-oral acid-base relationship is highly important. A definite relationship has been observed^{9,10} between the ability of saliva to neutralize acid and the existing caries activity. Fosdick¹¹ found the buffering capacity of whole saliva in a group of caries immune subjects to be approximately 40 per cent higher than that in a group of caries susceptible subjects.

A highly significant positive correlation exists between rate of flow and both pH and buffering capacity of saliva; thus, the higher the rate of flow, the more protective the saliva. In addition to enhanced physical capabilities, high-flow saliva has a greater ability to neutralize intra-oral acid than does a lower flowing fluid. The results of the present study confirm that increases in salivary flow, induced by different flavours of several brands of gum, are accompanied by significant increases in both pH and buffer capacity.

Order of gum use	Flow rate (ml/min) for five minute samples					
	Sample 1		Sample 2		Sample 3	
	Mean	SD	Mean	SD	Mean	SD
Group 1 (N=50)						
sugarless	1.501	0.725	1.002	0.451	1.085	0.492
sugared	1.724	0.677	0.960	0.473	0.997	0.435
Group 2 (N=50)						
sugarless	1.958	0.658	1.758	0.603	1.702	0.610
sugared	1.702	0.624	1.514	0.528	1.489	0.552
Group 3 (N=50)						
sugared	1.509	0.487	1.144	0.392	1.095	0.348
sugarless	1.945	0.528	1.267	0.370	1.145	0.359
Group 4 (N=50)						
sugared	1.801	0.473	1.159	0.359	1.103	0.401
sugarless	1.926	0.466	1.324	0.375	1.153	0.354

There are no reliable data on the average length of time a person chews a bolus of gum. In the present study the bolus was renewed at five minute intervals and the question arose as to what the flow rate response would be if this time interval were different. Therefore, parotid flow rate was measured in 15 additional subjects who chewed sugared gum and renewed the bolus at intervals of either three, five, seven or 10 minutes. With the flow rate mean of 1.045 ml/min for the three minute group taken as 100 per cent, the five, seven and 10 minute means were 88, 79 and 68 per cent, respectively. In a different approach to this question,¹² subjects chewed a single bolus of sugared gum over three five minute periods and repeated the procedure with a comparable sugarless gum. With sugared gum the parotid flow rate for the second five minute period was 73 per cent of the initial period; the rate for the third period was 65 per cent of the initial mean. For the sugarless gum the second five minute collection rate was only 60 per cent of that of the first period. This decreased to 50 per cent during the third five minute interval. Clearly, the parotid flow rate decreased rapidly as continued mastication removed stimulating factors from the gum.

In addition to its performance in inducing rinsing and cleansing the teeth by saliva flow acceleration, chewing gum can act as a carrier of chemical agents for both intra-oral and systemic administration. Several promising studies have been carried out with various active ingredients incorporated into the gum.^{5, 13-20}

Even though chewing gum has potential for benefitting dental health, its use has been frowned upon because its sugar content is generally thought to be cariogenic. While controversy may exist as to whether chewing gum increases or reduces caries incidence,^{12, 21-24} many dentists are not in favour of a sugar-containing gum.

The development of a pleasing formulation for chewing gum without sugar represents a significant step forward. The relative nonfermentability of sorbitol and mannitol⁶ obviates the problem of potential cariogenicity. Additionally, the sugarless formulation was significantly more effective than sugared gum in inducing a copious flow of saliva. This permits taking advantage of the physical and chemical changes induced by glandular stimulation without the concurrent hazard of fermentable carbohydrate in the gum bolus.

It is not the intent of this paper to deal with the social acceptability of gum chewing or to compare brands of sugarless gums. From the dental point of view, the principal complaint voiced against chewing gum has been the inclusion of fermentable carbohydrates in the formulation. The opinion persists that the worthwhile effects derived from a copious flow of saliva elicited by chewing gum are more than offset by the dangers associated with the inclusion of sugar in the gum. The present study reveals that it is possible to elicit a highly desirable increased rate of salivary flow with its associated physical and chemical advantages without incorporating an offending sugar in the gum. It seems reasonable to consider sugarless gums as potential

ids in preventive dentistry and to suggest that chewing them may promote dental health.

Summary

Whole saliva flow rate, pH and buffer capacity were studied under conditions of no exogenous stimulation and in subjects chewing either sugared or sugarless chewing gums.

Chewing either type of gum brought about highly significant increases in rate of flow, in pH and in buffer capacity values. Rate of flow was positively correlated with both pH and buffer capacity. With all four flavours of the four brands of sugarless gums considered, chewing the gums increased the resting saliva flow rate from 0.322 ml/min to 1.70 ml/min. The pH of saliva was increased from 6.54 to 7.40 and the buffer capacity increased from 0.31 to 0.60 ml of titrant required. These changes suggest highly beneficial effects in preventing demineralization of the teeth by acids.

In a study comparing sugared and sugarless gums, it was found that nonfermentable carbohydrates, such as sorbitol and mannitol, can be substituted for fermentable carbohydrates, such as sucrose, in a gum formulation without loss of the gum's ability to elicit a copious flow of saliva. Flow rate induced by the sugarless formulation was significantly higher than that elicited by the same size bolus of the sugared gum. It is therefore possible to consider the potentialities of sugarless gum in preventive dentistry programs both as an inducer of salivary flow and as a vehicle for topical application and systemic administration of therapeutic agents.

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Gum pad relationships of infants at birth

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This article describes the gum pad relationships in 338 newborn babies. The relationships were classified as overbite, overjet, overbite-overjet, end-to-end or anterior open bite. The majority of the babies had an overbite or an overbite-overjet relationship, with the mandible distal and lingual to the maxilla. There was a high correlation between the occlusion of the mothers and the gum pad relationship of the infants. A longitudinal study of the same babies is in progress to discover the effects of feeding methods and oral habits on the developing occlusion.

L'article suivant présente les rapports entre les crêtes gingivales de 338 nouveaux-nés. Les rapports sont classifiés d'après les critères suivants: supraclusion, surplomb, supraclusion-surplomb, bout-à-bout, ou béance antérieure. L'on note chez la majorité des bébés la présence de supraclusion ou de supraclusion-surplomb, la mandibule étant en position distale et linguale par rapport au maxillaire supérieur. La corrélation est très élevée entre l'occlusion de la mère et les rapports des crêtes gingivales chez les nouveaux-nés. L'étude longitudinale des mêmes nouveaux-nés se poursuit. Elle se propose de découvrir les effets des méthodes d'alimentation et des habitudes orales sur l'occlusion.

The dental literature reveals a variety of opinions concerning the natural gum pad relationship in infants. Weinberger¹ observed a series of embryonic dried skulls from the third to the ninth month and also examined 500 newborn infants under the age of four days. He reported varying degrees of protrusion and retrusion of the mandible but found no open bites. Friel,² in a study of 15 infants, noted that the lower gum pad was in a distal relationship and that the gum pads did not meet in the anterior region at birth because the tip of the tongue was lying between the two pads. Clinch,³⁻⁶ investigating the occlusion of 400 full-term newborn infants, reported 250 anterior open bites. She considered this a desirable condition which would lead to an ideal overbite after tooth eruption. Sillman,⁷ looking for causes of malocclusion, observed 709 newborn infants and obtained 134 sets of maxillary and mandibular impressions and 113 bite registrations. He concluded that there was no contact between the maxillary and mandibular gum pads, whether the jaw was at rest or in function, and that the mandibular gum pad was distal to the maxillary gum pad in all cases. Sillman suggested that the greater the distal relationship the greater would be the possibility of developing irregularities in the dentition. He stated that the anterior open bite bore no relationship to a future open bite, the degree of overbite, the occlusion of the molars or the future interrelationship of the

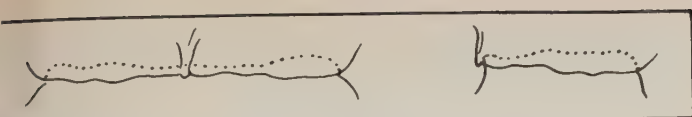


Fig 1 Anterior and lateral views of the overbite relationship of the anterior gum pads of infants at birth.

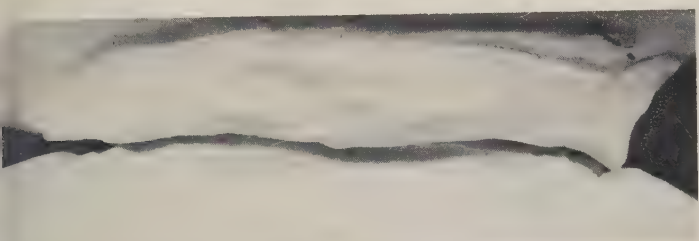


Fig 2 Record casts showing the anterior view of the overbite gum pad relationship at birth.

jaws. The type of birth delivery, method of feeding and mouth breathing did not appear to be factors contributing to malocclusion. Heredity seemed to be the most important aetiological factor producing irregularities and malocclusions in the primary dentition. Richardson and Castaldi⁸ observed an anterior open bite in 25 of the 38 babies studied, but most of these infants were not first seen at birth.

In order to establish a basis for future investigations of the aetiology of malocclusion and functional deviations, a study of infant gum pad relationships was initiated in the nurseries of the University of Alberta Hospital. A preliminary examination of 100 infants ranging in age from seven hours to 12 days revealed an anterior open bite in only 11 per cent. This figure appears extremely low if an anterior open bite is natural at birth, as suggested in earlier publications. A detailed investigation was therefore undertaken.



Fig 3 Record casts showing the lateral view of the overbite gum pad relationship at birth.

Methods

The following classification was used to assess the infant occlusions:

Overbite (vertical overlap), being the extension of the anterior portion of the maxillary gum pad over the corresponding portion of the mandibular gum pad in a vertical direction when the posterior portions of the two opposing gum pads are in contact (Fig 1-4).

Overjet (horizontal overlap), being the anterior projection of the anterior portion of the maxillary gum pad beyond the corresponding portion of the mandibular gum pad in a horizontal direction when the posterior portions of the two opposing gum pads are in contact (Fig 5-8).

Overbite-overjet (vertical and horizontal overlap), being a combination of both conditions existing simultaneously (Fig 9-12).

End-to-end, being a condition in which the anterior portions of maxillary and mandibular gum pads meet without overbite or overjet when the posterior gum pads are in contact (Fig 13-16).

Open bite, being the condition in which a vertical space exists between the anterior portions of the maxillary and mandibular gum pads when the posterior portions of the two opposing gum pads are in contact (Fig 17-20).

In assembling the data we first recorded the relevant medical history of each infant and mother. The mothers were questioned regarding the dental history of the family, with particular emphasis on a history of malocclusion. The occlusion of mothers was also examined.

A large number (188) of newborn infants was examined and photographs were taken with the gum pads in occlusion. Maxillary and mandibular impressions and bite registrations were obtained

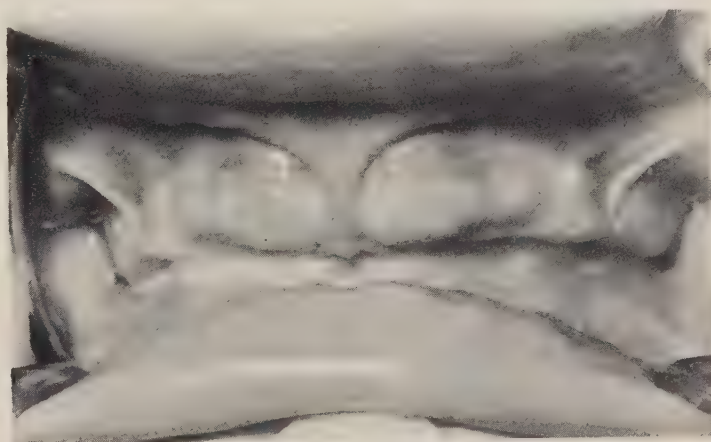


Fig 4 Intra-oral view of the overbite relationship of the gum pads at birth.

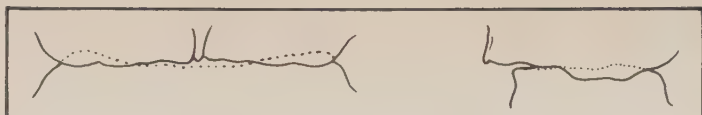


Fig 5 Anterior and lateral views of the overjet relationship of the anterior gum pads of infants at birth.

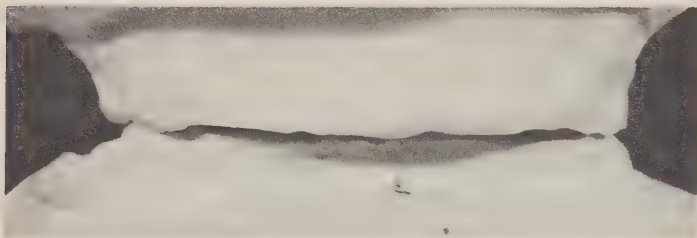


Fig 6 Record casts showing the anterior view of the overjet gum pad relationship at birth.

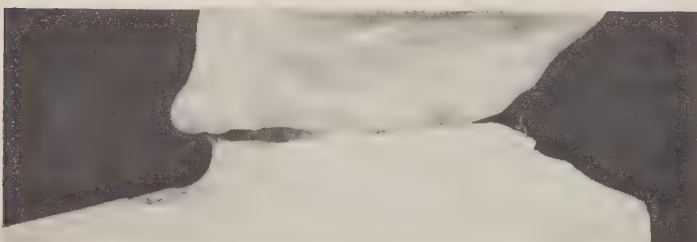


Fig 7 Record casts showing the lateral view of the overjet gum pad relationship at birth.



Fig 8 Intra-oral view of the overjet relationship of the gum pads at birth.

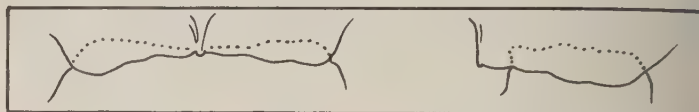


Fig 9 Anterior and lateral views of the overbite-overjet relationship of the anterior gum pads of infants at birth.

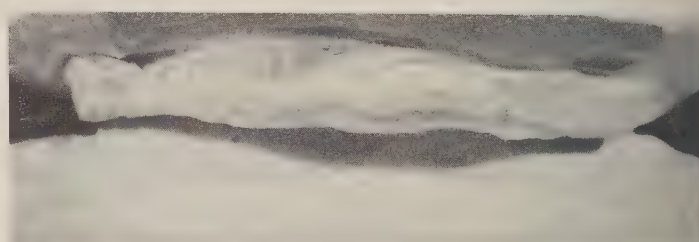


Fig 10 Record casts showing the anterior view of the overbite-overjet gum pad relationship at birth.

from another 150 newborn infants. Their gum pads were also photographed in occlusion. Plaster casts made from the impressions were articulated by means of a wax bite rim.

Impressions and photographs were repeated for each infant at four and at eight months. Further information about feeding and sucking habits was obtained from the mother.

The casts and photographs were used to study and classify the gum pad relationships. Particular attention was given to the incidence and extent of anterior open bites. Efforts were made to correlate findings and histories.

A variety of sizes of maxillary and mandibular cold-cure acrylic trays were made in advance so that a mouth of any size could be accommodated. The impressions and bites were taken with Kerr yellow plastic wax softened in a warm water bath. The bite was registered using a carrier constructed from Ash Metal No. 7 sandwiched between two sheets of wax (Fig 21, 22). To facilitate the taking of impressions and bites, the baby was placed on an infantile circumcision board (Circumstraint, Olympic Surgical Co, Seattle, Wash) (Fig 23). The infant's head was tilted slightly upward by the assistant for the maxillary impression (Fig 24) and slightly downward for the mandibular impression (Fig 25). Before registering the bite, the following conditions were

recorded: (a) the presence or absence of anterior open bite; (b) the presence or absence of overbite, overjet or end-to-end relationship; (c) the relation of the posterior molar segments of the mandible and the maxilla.

The jaw relationship was tested by raising and lowering the mandible several times until the infant was in a state of repose and the orofacial and cervical musculatures were relaxed, offering minimal resistance to closure. The wax bite rim was then inserted into the mouth, making certain that the wax portion was between the ridges. The mandible was gently closed into the wax against the maxilla. Because of the bulk of wax, the tongue was forced backward. The wax bite registration was examined against a source of light to check for detail and then reinserted into the infant's mouth to check for accuracy of the bite registration.

A photograph of the gum pad relationship of each infant was taken while the infant was restrained in the circumcision board. We used the Asahi Pentax camera with a close-up lens and electronic flash. Panatomic-X fine grain black and white film was exposed at f:16. A thin plastic sheet covered the flash attachment to prevent glare. In some instances several exposures were made of the same bite in order to test for the consistency of the bite registration.



Fig 11 Record casts showing the lateral view of the overbite-overjet gum pad relationship at birth.



Fig 12 Intra-oral view of the overbite-overjet relationship of the gum pads at birth.

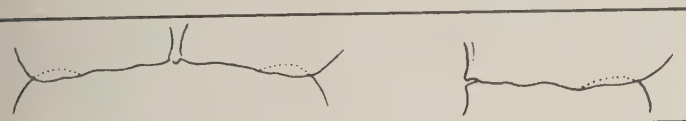


Fig 13 Anterior and lateral views of the end-to-end relationship of the anterior gum pads of infants at birth.

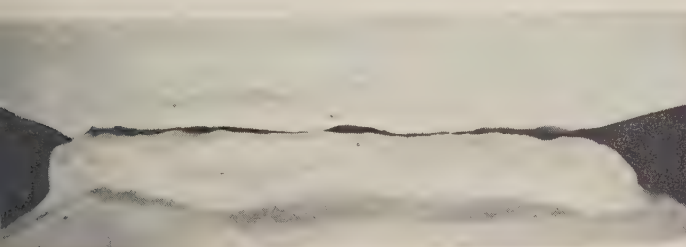


Fig 14 Record casts showing the anterior view of the end-to-end gum pad relationship at birth.

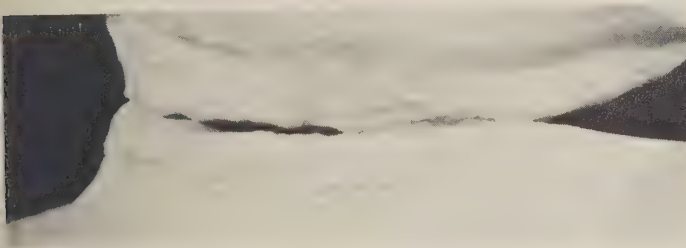


Fig 15 Lateral view of the end-to-end gum pad relationship at birth.



Fig 16 Intra-oral view of the end-to-end relationship of the gum pads at birth.

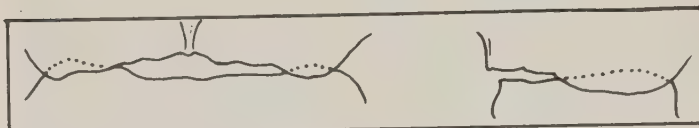


Fig 17 Anterior and lateral views of the open bite relationship of the anterior gum pads of infants at birth.

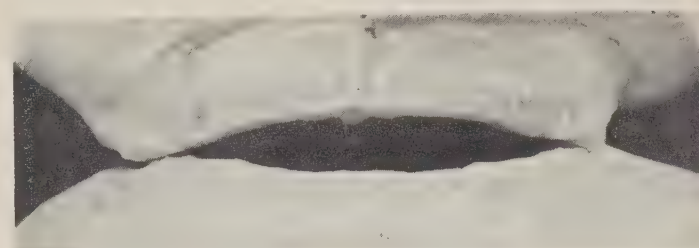


Fig 18 Record casts showing the anterior view of the open bite gum pad relationship at birth.

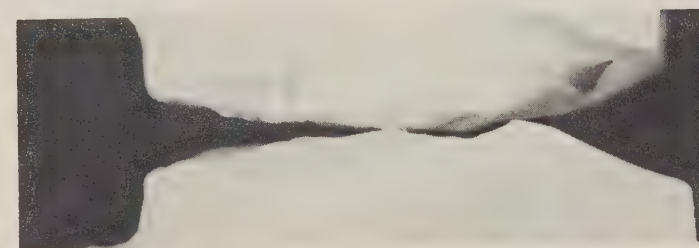


Fig 19 Lateral view of the open bite gum pad relationship at birth.

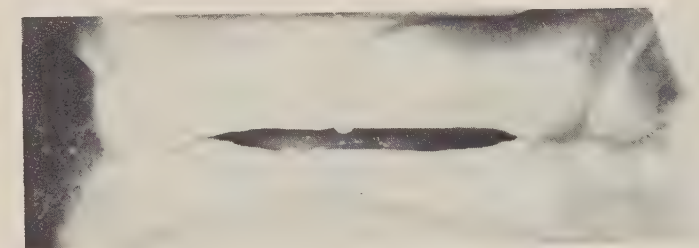


Fig 20 Intra-oral view of the open bite relationship of the gum pads at birth.

After boxing, the casts were poured in albastone. They were trimmed with the bases parallel to the maxillary and mandibular gum pads. The accuracy of the bite was checked by observation and by comparison with the photographs. The wax bite was then used to transfer the relationship to the casts, which were trimmed with the heels flush.

Dental record casts, wax bite registrations, photographs and notations of visual observations were

taken of 150 newborn infants ranging in age from eight hours to nine days. The same records are being taken at roughly six month intervals up to 36 months in order to study the changes during development and to endeavour to relate feeding methods and oral habits to changes in gum pad relationships.

Photographs and visual observations of an additional group of 188 newborn infants served to

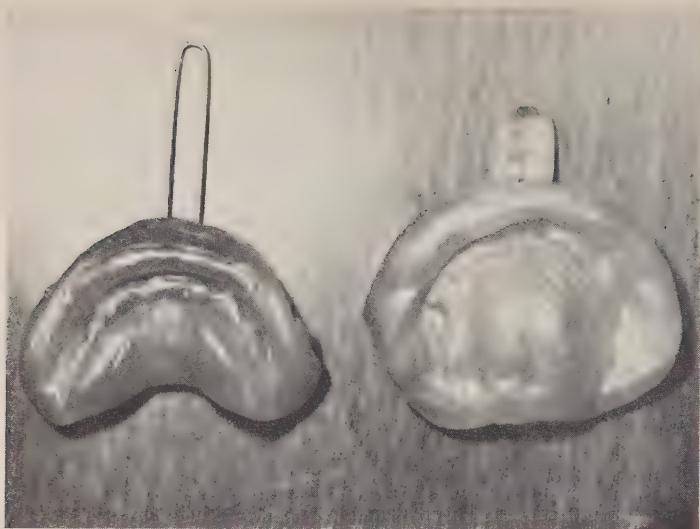


Fig 21 Maxillary and mandibular wax impressions of the gum pads of an infant.



Fig 24 Taking the maxillary impression.

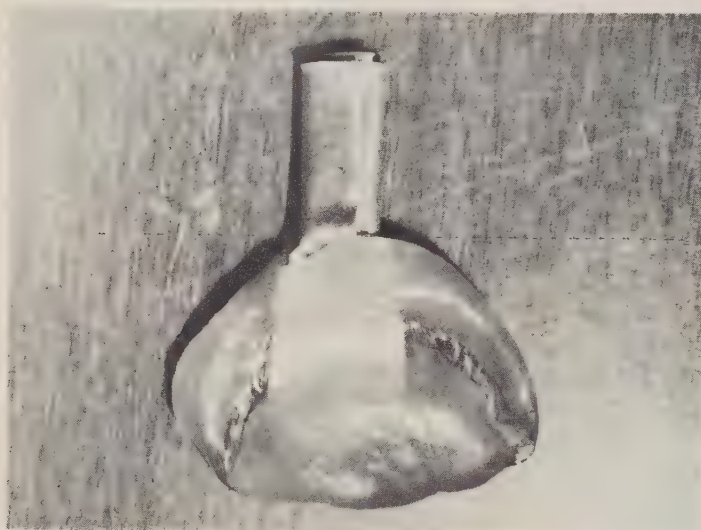


Fig 22 Wax bite registration of the gum pads of an infant.



Fig 25 Taking the mandibular impression.



Fig 23 Baby on circumcision board ready for the taking of impressions.

supplement the findings of the original detailed longitudinal study. The ages of the babies in the supplementary survey ranged from a few hours to seven days. In this group, 101 were breast feeding and 87 were bottle feeding at the time of examination.

Results

Table 1 reveals that a significant number of infants (136 out of 150, 90.67 per cent) exhibited an overbite-overjet relationship or only an overbite relationship of the anterior gum pads. Apparently babies are born with gum pad relationships which resemble the incisor relationships of their mothers (Tables 1 and 4).

Sixty-nine (46.00 per cent) of the 150 infants examined at birth exhibited the overbite-overjet relationship of the anterior gum pads, while 67 (44.67 per cent) had overbite alone. Eight (5.33 per cent) had overjet only and four (2.67 per cent) had the end-to-end relationship. Two babies (1.33

Anterior gum pad relationship of 150 neonates (79 males and 71 females) shortly after birth* Table 1

Relationship	Incidence
Overbite-overjet	69 (46.00%)
Overbite	67 (44.67%)
Overjet	8 (5.33%)
End-to-end	4 (2.67%)
Open bite	2 (1.33%)
Total	150 (100%)

*Of these 150 babies, 87 were breast fed and 63 bottle fed after birth

Anterior gum pad relationship of 188 neonates (95 males and 93 females) shortly after birth* Table 2

Relationship	Incidence
Overbite-overjet	83 (44.15%)
Overbite	84 (44.68%)
Overjet	12 (6.38%)
End-to-end	3 (1.60%)
Open bite	6 (3.19%)
Total	188 (100%)

*Only photographs and visual observations of gum pads of this group of infants were taken and medical history of both infants and mothers was also recorded. In this group of infants, 101 were breast fed and 87 bottle fed at the time of examination

Anterior gum pad relationship of 338 neonates (174 males and 164 females) shortly after birth* Table 3

Relationship	Incidence
Overbite-overjet	152 (44.97%)
Overbite	151 (44.67%)
Overjet	20 (5.92%)
End-to-end	7 (2.07%)
Open bite	8 (2.37%)
Total	338 (100%)

*This group of infants includes 150 neonates from Table 1 and 188 from Table 2

Occlusion of mothers Table 4

Molar relation (Angle classification)		Incisor relation	
Class I	46 (52.27%)	Overbite-overjet	54 (60.00%)
Class II	38 (43.18%)	Overbite	29 (32.22%)
Class III	4 (4.55%)	Overjet	0 (0.00%)
		End-to-end	5 (5.56%)
		Open bite	2 (2.22%)
Total	88*(100%)	Total	90†(100%)

*All mothers had natural dentition

†This figure includes two mothers with posterior partial dentures

per cent) were found to have an anterior open bite relationship.

The supplementary survey of 188 babies confirmed the findings of the major study (Table 2).

Table 3 combines the results from Tables 1 and 2. It is apparent that either an overbite-overjet (44.97 per cent) or an overbite (44.67 per cent) was the dominant anterior gum pad relationship of the infants shortly after birth in this study. Eight open bites (2.37 per cent) were observed in a total of 338 newborn infants.

Table 4 summarizes the occlusions of the mothers of the infants in the study. The majority (52.27 per cent) had Angle Class I molar relationships, 43.18 per cent had Class II relationships and the remaining 4.55 per cent had Class III relationships.

A majority of the mothers had either an overbite-overjet relationship (54 out of 90, 60.00 per cent) or an overbite relationship alone (29 out of 90, 32.22 per cent). The two classifications (overbite-overjet and overbite alone) comprised 92.22 per cent of the incisor relationships observed. None of the mothers had an overjet relationship of the incisors without a concomitant overbite.

Discussion and conclusions

The trend toward an overbite-overjet or an overbite gum pad relationship in newborn infants in this study disagrees with the findings of some earlier investigators. Friel's² results were based on observations of stillborn infants in which he found the tongue lying between the gum pads. Clinch's³ casts were occluded without bite registrations, leaving the accuracy of the relationship of the casts open to question, whereas the present study had the advantage of visual observation, photographs of the gum pad relationship and casts occluded with a bite registration.

The theory that an anterior open bite relationship is prerequisite to the development of the most desirable incisor relationship may be a convenient explanation rather than a proven fact. Further observation of the developing occlusions of the infants under continuing study may cast some light on the subject. Findings during the first eight months of this study tend to discount the theory, but no definite conclusions can be made until the primary molars have erupted.

In assessing infant gum pad relationships, it is imperative that the observations be made immediately after birth, before feeding methods or habits have had an impact on the gum pads. Changes have been observed to occur very rapidly.

The mandible was found to be in a posterior and lingual relationship to the maxilla in 97.33 per cent of our cases (Table 1). This finding agrees with those of other investigators.^{4,7,8} If there was no skeletal discrepancy between the arches, the maxillary and mandibular gum pads should then logically exhibit either an overbite-overjet or an overbite relationship. This is indeed what was found in 90.67 per cent of the newborn infants examined.

The degree of open bite in two newborn infants was minimal when the molar regions of the two gum pads were in contact. The incidence of open bites (1.33 per cent) at birth in this study was extremely low. This finding aroused doubt that an anterior open bite is natural at birth, as suggested by previous studies.²⁻⁸

These results appear to indicate that an overbite-overjet or an overbite anterior gum pad relationship is a natural condition at birth. Further study of a large sample of full-term, healthy, newborn infants with a pure racial background may verify these findings. Supplementary cephalometric studies of the temporomandibular joints of newborns and electromyographic analysis of the muscles of mastication during bite registration may also provide invaluable information regarding the position of the condyle in the developing glenoid fossa, the presence or absence of centric occlusion and centric relation positions of the infantile arches, and any

muscular activities during bite registration of the infantile gum pad relationships.

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The material for this paper was drawn from Dr. Cheung's MSc thesis in paedodontics. Dr. Cheung is a practising paedodontist.

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Caries-inhibiting action of three different topically-applied agents on incipient lesions in newly erupted teeth: Results after 24 months

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This study compares the caries-inhibiting action of topically-applied stannous fluoride, acidulated phosphate-fluoride and silver nitrate. All three have their greatest effect during the first 12 months of treatment. For lesions which were not treated for 18 months, stannous fluoride and phosphate fluoride were found to be more effective than silver nitrate. For lesions not treated for 24 months, phosphate fluoride appears to be the most effective.

Cette étude compare l'effet inhibiteur sur la carie de l'application topique de fluorure stanneux, de fluorure de phosphate acidulé et de nitrate d'argent. L'effet maximal de ces trois substances se manifeste surtout durant les 12 premiers mois du traitement. Le fluorure stanneux et le fluorure de phosphate exercèrent une action plus efficace que le nitrate d'argent sur les lésions qui étaient demeurées sans traitement durant 18 mois. Pour les lésions non traitées durant 24 mois, le fluorure de phosphate se montra plus efficace.

At present, stannous fluoride and acidulated phosphate-fluoride are the two topically-applied chemical agents widely used to prevent dental caries. While the effectiveness of these agents in protecting the teeth from the onset of caries has been demonstrated many times,¹ few studies have been concerned with their action on caries which has already developed. Practically no effort had been made to estimate the progress of carious lesions following topical fluoride treatment until 1967, when Muhler et al² showed an 80.3 per cent reduction in the growth of incipient carious lesions in young adults when they reported the results of a 30 month study of the effectiveness of three forms of stannous fluoride therapy. There appears to be no report on any caries-inhibiting action of acidulated phosphate-fluoride.

This study compares the caries-inhibiting action of stannous fluoride, acidulated phosphate-fluoride and ammoniacal silver nitrate on initial carious lesions of newly erupted first permanent molars in children.

Although it is generally agreed that silver nitrate is ineffective in arresting deep carious lesions³ and may severely irritate the pulp,⁴ in 1951 Rabino-wich⁵ concluded from an extensive review of the literature that ammoniacal silver nitrate had a definite value in arresting initial carious lesions; for this reason it was included in the study.

Materials and methods

Four hundred and twenty-eight subjects were selected from a group of patients whose dental caries in their primary dentition had been treated and whose teeth had been completely restored in dental clinics of the Department of Health of the City of Vancouver, where the communal water supply contains practically no fluoride. These patients were treated before their first permanent molars had erupted. They were selected because they also shared the following three attributes: (1) A high caries experience, with the interproximal surfaces between all primary molars restored with Class II silver amalgam restorations. (2) Mesial caries in one of their first permanent molars which had erupted within the preceding year or two. These lesions could be diagnosed radiographically as incipient. The diagnosis was made in each case by at least two dentists experienced in dentistry for children. (3) Distal caries present in the second primary molar adjacent to the lesion of the first permanent molar.

The subjects were divided at random into four groups to compare the effects of the three different topically-applied solutions with a placebo treatment.

At the beginning of the study the distal caries in each case was removed from the second primary molar and the tooth was restored with silver amalgam. The mesial surface of the first permanent molar was thoroughly cleaned and dried and the appropriate solution was applied on the etched surface after the distal cavity of the second primary molar had been prepared for a Class II restoration but before the amalgam was inserted. The solution was kept in contact with the lesion for four minutes. During the entire procedure the teeth were isolated with a rubber dam.

The carious mesial surface of the first permanent molar of each child received a topically-applied solution according to the group in which the subject belonged, as follows: group 1 received a placebo solution of distilled water; group 2, an ammoniacal silver nitrate solution which was precipitated with eugenol after the four minute contact; group 3, acidulated phosphate-fluoride solution; and group 4, a freshly mixed 8 per cent stannous fluoride solution.

The effects of the chemical agents on the lesions were compared in the following manner: (1) After treating the initial carious lesion on the first permanent molar with the topically-applied solution and restoring the distal surface of the adjacent second primary molar, a radiograph was taken of the first permanent molar to show the lesion. (2) Subsequent radiographs showing the mesial lesion in the first permanent molar were taken when each

subject was recalled at successive six month intervals. (3) When it became radiographically evident that a lesion had progressed to the dentino-enamel junction, its growth was no longer considered effectively inhibited and it was studied no further. This judgment was made by at least two dentists experienced in dentistry for children.

All radiographs were taken with the same machine at the same position by the same operator using the Rinn Bite-Wing instrument to reduce errors of incorrect alignment of the x-ray beam and allow accurate duplication of the tooth outline. The entire study was double blind after the solutions were painted on the teeth, with neither the examiner nor the patient aware of the group to which he belonged.

In each case a chemical agent or the placebo was applied once at the beginning of the study. Subjects who moved out of the city or did not wish to continue at any time during the test period were dropped from the entire study. As 51 subjects were lost in this way, a total of 377 are recorded in the results. Subjects whose radiographs showed that caries had progressed to the dentino-enamel junction during the course of the study were also dropped from the investigation and referred to a dentist for treatment.

Results

Table 1 shows the number of subjects in each group with initial carious lesions at the start of the study and the number that remained after two years whose caries had not progressed through the enamel. The data in this table also indicate how many subjects of each group were eliminated from the study because their lesions were seen radiographically to have extended into the dentino-enamel junction when they were recalled at each successive six month period. The cumulative totals of subjects discontinued for this reason at each six month interval are also shown as percentage rates for each group. Figure 1 is a graphic presentation of the data.

During the first six months the carious lesions of six of the subjects in the control group progressed to the dentino-enamel junction, while none of the lesions treated with silver nitrate or phosphate-fluoride and only one of those treated with stannous fluoride had progressed that far. When the subjects were recalled one year after treatment, caries progression made it necessary to drop an additional 31 from the control group, 15 from the silver nitrate group, 12 from the phosphate-fluoride group and only six from the stannous fluoride group. These numbers add up to the cumulative total

Caries which progressed to the dentino-enamel junction during a two year period when seen at six month intervals

Table 1

Treatment group	Subjects at start of study	Subjects whose caries progressed to the dentino-enamel junction								Subjects after 24 months
		6 months		12 months		18 months		24 months		
		No.	%	No.	%	No.	%	No.	%	
1 Control	100	6	6.0	37	37.0	71	71.0	82	82.0	18
2 Silver nitrate	96	0	0.0	15	15.6	56	58.3	66	68.7	30
3 Phosphate-fluoride	92	0	0.0	12	13.0	31	33.7	47	51.1	45
4 Stannous-fluoride	89	1	1.0	6	6.7	39	43.8	60	67.4	29
Total	377									122

dropouts at 12 months shown as percentage rates of each group.

Eighteen months after treatment there appeared to be a more pronounced difference in the caries progression of each group: of the lesions in the group treated with phosphate-fluoride, 33.7 per cent had progressed to the dentino-enamel junction compared with 43.8 per cent of the lesions in the stannous fluoride group, 58.3 per cent in the silver nitrate group and 71 per cent in the control group. When the remainder of the subjects were recalled two years after treatment it was found that 82 of the 100 initial carious lesions in the control group had progressed as far as the dentino-enamel junction, while 68.7 per cent of those in the silver nitrate group, 67.4 per cent in the stannous fluoride group and 51.1 per cent in the phosphate-fluoride group had extended that far.

Table 2 contains the results of chi square tests to ascertain the statistical significance of the results. These tests were not valid (expected frequency less than 5) at the six month period. At the 12, 18 and 24 month periods the tests showed that all three topically-applied agents did significantly reduce the growth of caries to the dentino-enamel junction when compared to the controls, except silver nitrate at the 18 month period. When the lesions treated with silver nitrate were used as the controls and compared to those treated with the fluorides, phosphate-fluoride proved to be significantly more effective at the 18 and 24 month periods, while stannous fluoride showed superiority only at the 18 month period. No significant differences could be shown when phosphate-fluoride was compared to stannous fluoride except at the 24 month period, at which time phosphate-fluoride was shown to be the more effective.

Discussion

In certain clinical situations, delay in the progress of incipient dental caries is especially desirable; for example, on the proximal surface of a newly erupted permanent molar. In such a case it may be difficult to prepare an ideal Class II cavity until the tooth is erupted further. Jinks⁶ recognized the need for a caries-inhibiting agent for the interproximal surfaces of newly erupted molars when he investigated the effects of a fluoride-impregnated cement placed in a tooth so that it would come into contact with an adjacent erupting tooth.

For the past few years most dentists have chosen acidulated phosphate-fluoride in preference to

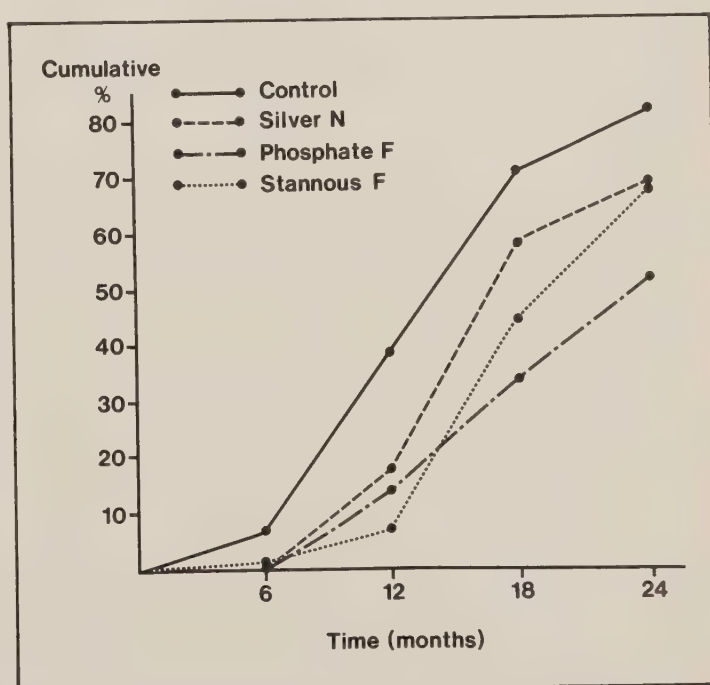


Fig 1 Caries which progressed to the dentino-enamel junction during a 24 month period.

Test groups	Study period (months)	Chi square values	P
Control vs silver nitrate	12	11.48	< 0.001
	18	3.45	NS
	24	4.65	< 0.001
Control vs phosphate-fluoride	12	14.47	< 0.001
	18	26.77	< 0.001
	24	20.77	< 0.001
Control vs stannous fluoride	12	24.53	< 0.001
	18	14.30	< 0.001
	24	20.77	< 0.001
Silver nitrate vs phosphate-fluoride	12	0.25	NS
	18	11.47	< 0.001
	24	6.11	< 0.05
Silver nitrate vs stannous fluoride	12	3.62	NS
	18	3.89	< 0.05
	24	0.04	NS
Stannous fluoride vs phosphate-fluoride	12	2.01	NS
	18	1.95	NS
	24	4.99	< 0.05

NS = Not statistically significant at the .95 level of confidence

stannous fluoride to apply on sound teeth for the prevention of dental caries. Unlike stannous fluoride, phosphate-fluoride does not discolour the teeth, does not irritate the gingiva and has an acceptable taste; furthermore, as phosphate-fluoride is stable when kept in a plastic container, it does not have to be freshly mixed for each treatment.^{7,8}

However, many dentists believe stannous fluoride is more effective than phosphate-fluoride in arresting caries that is already present. This is undoubtedly because of the pigmentation of lesions following treatment with stannous fluoride which has been associated with caries arrestment.^{9,10}

When assessing the relative caries-inhibiting potential of phosphate-fluoride and stannous fluoride in the subjects of this study one year after treatment, it is seen that only about half the number of carious lesions treated with stannous fluoride progressed to the dentino-enamel junction compared to those treated with phosphate-fluoride. But during the next six months, despite the diminishing effectiveness of each of the two agents, nearly twice as many lesions in the stannous fluoride group reached the dentino-enamel junction. This finding seems to confirm the observation that

stannous fluoride loses much of its protective power after one year.³

The results of treatment with silver nitrate were surprising: during the first 12 months its caries-inhibiting action seemed to be just as effective as either of the topical fluorides. Although caries treated with silver nitrate showed more progression after the first six months, about the same number of lesions was inhibited during the two year period as those treated with stannous fluoride. These data tend to confirm the observations made by McDonald³ when he studied the action of stannous fluoride and silver nitrate on enamel lesions.

Summary

An evaluation was made of the caries-inhibiting action of three chemical agents which are used extensively to control dental caries. For a period of two years after a single application each of the topically-applied solutions — stannous fluoride, acidulated phosphate-fluoride and ammoniacal silver nitrate — did significantly retard the progress of dental caries.

All three chemical agents had their greatest effect during the first 12 months. The effectiveness of silver nitrate was comparable to that of stannous fluoride or phosphate-fluoride during the first 12 months, but diminished more rapidly than that of the fluorides thereafter.

Although fewer lesions treated with stannous fluoride progressed to the dentine during the first 12 months, in the majority of cases phosphate-fluoride was shown to be more effective than stannous fluoride or silver nitrate when the lesions were examined two years after treatment.

Conclusion

It has been shown that acidulated phosphate-fluoride and ammoniacal silver nitrate inhibit the growth of initial carious lesions and that their cariostatic action is comparable to that of stannous fluoride.

Phosphate-fluoride or silver nitrate appear to be just as effective as stannous fluoride for inhibiting the progress of initial carious lesions for 12 months. To inhibit the growth of lesions which will not be treated for 18 months, it may be better to apply stannous fluoride or phosphate-fluoride. If the lesion will be neglected for 24 months, phosphate-fluoride seems to be more effective for retarding its progress than stannous fluoride or silver nitrate.

From the results of this study, it would appear advisable to repeat topical treatments of enamel lesions at least every 12 months to achieve significant cariostatic action.

This study was assisted by National Health Grant 609-7-202.

Dr. Hyde who is with the Department of Public and Community Dental Health is also director of continuing dental education at the Faculty of Dentistry, University of British Columbia, Vancouver 8.

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- 9 Muhler, J.C. Stannous fluoride enamel pigmentation — evidence of caries arrestment. J Dent Child 27:157, 1960.
- 10 Hyde, E. J. and Muhler, J. C. Pigmentation of teeth treated with stannous fluoride and its association with caries incidence and oral hygiene. J Canad Dent Ass 29:514, 1963.

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An endodontic suction adapter kit

I. F. Goodin, BDS, DDS
Ottawa

This article describes an endodontic suction adapter which the author and many endodontists have found invaluable in their practices.

In debriding and shaping a root canal, especially in the lower teeth, there is an enormous amount of dentine "mud" which tends to gravitate to the bottom of the tooth. This can be diminished by copious flushing of the canals as debriding and shaping progress, so that this "mud" can be held

in suspension rather than allowed to settle at the apex of the tooth, blocking the apical foramen. The fluid is then aspirated by the suction adapter.

The adapter consists of three parts: (1) a bottle-shaped portion attached to a suction machine, such as the A.V.S. or Vacudent; (2) quarter-inch rubber tubing, approximately 3½ feet long and attached to the free end of the bottle-shaped portion; and (3) a terminal portion, one end of which is attached to the rubber tubing and the other to a 16 gauge hypodermic needle (Fig 1-4). The terminal portion, with the needle removed, can be used to aspirate

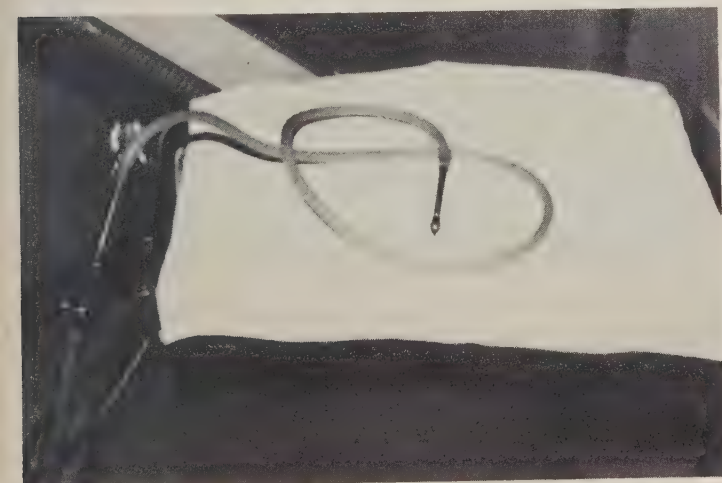


Fig 1 Suction adapter attached to A.V.S. suction machine and ready for use.

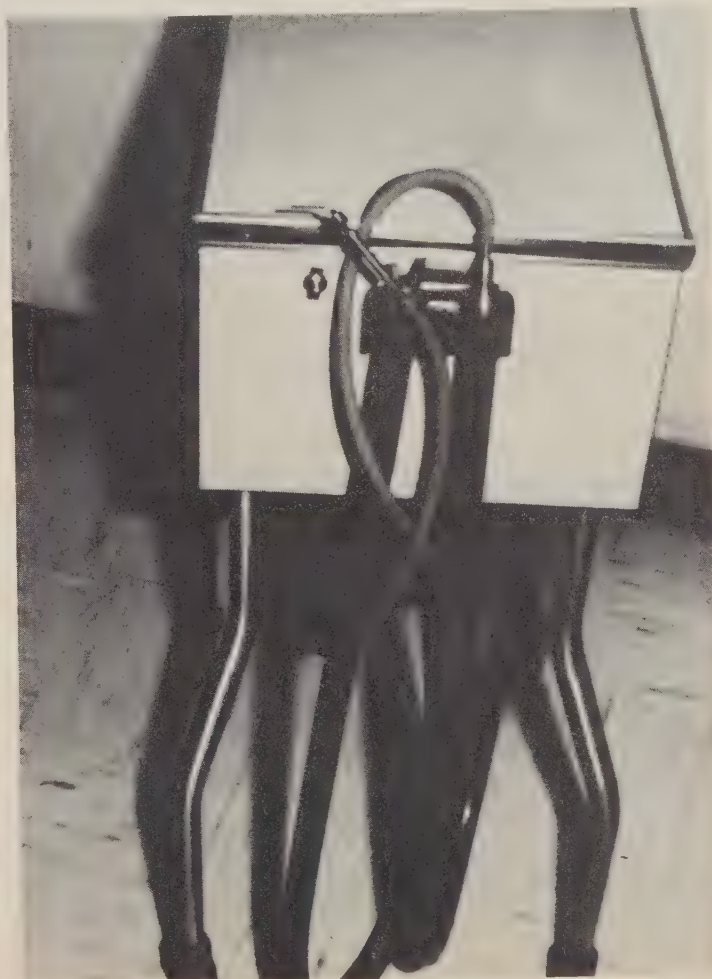


Fig 2 Suction adapter attached by Vacudent suction machine.



Fig 3 Suction adapter being used on upper central incisor.



Fig 4 Suction adapter being used on lower first molar.

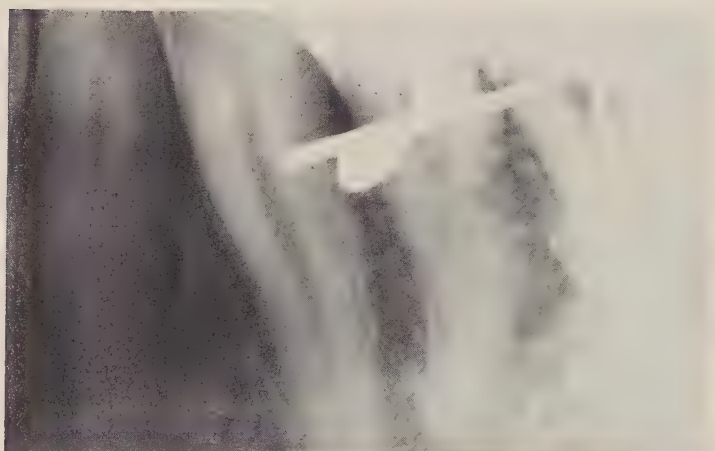


Fig 5 Gates Glidden blade separated and lodged in apical third of lower left second bicuspid.

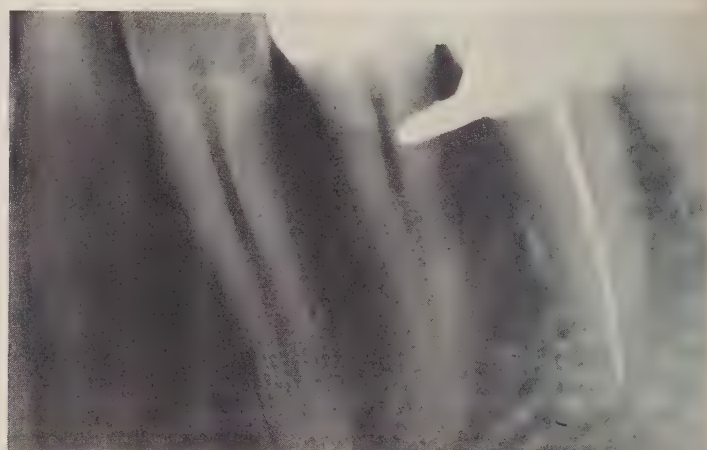


Fig 6 Blade removed and file reinserted into canal.

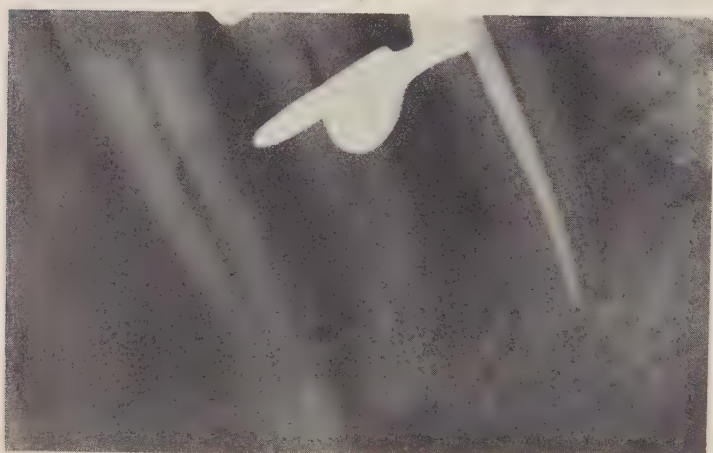


Fig 7 Gutta percha point fitted.

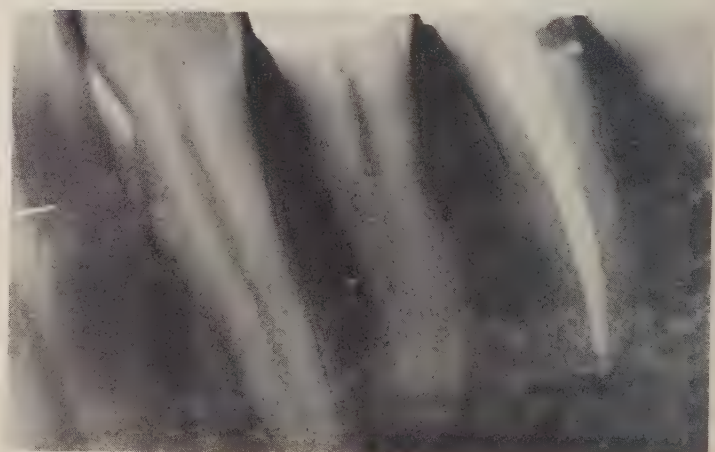


Fig 8 Warm gutta percha condensed into canal.

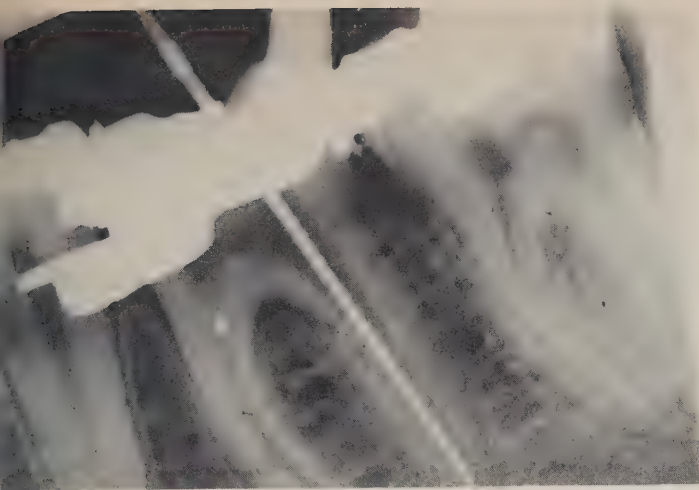
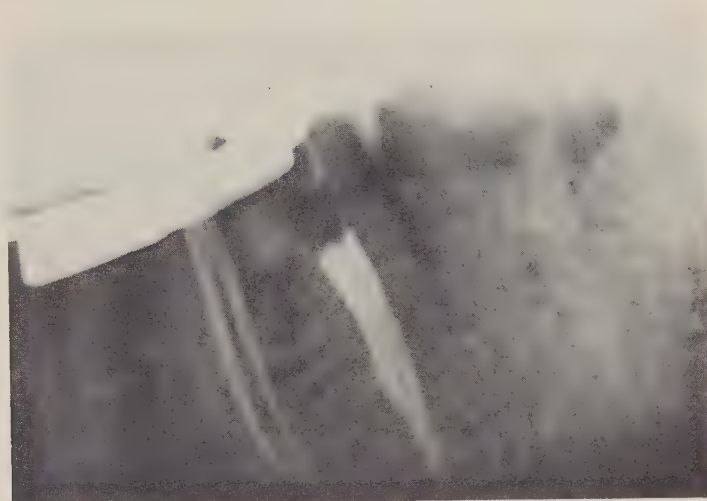


Fig 9 End of root canal file lodged in coronal third of mesiobuccal canal of lower left first molar.



Fig 10 Separated file removed in manner described previously.

Fig 11 Gutta percha points fitted into canal.



large particles from the orifice of the tooth. With the needle attached, fluid or debris in suspension is easily removed from the pulp chamber and canal.

Advantages

The component parts are easily separated for autoclaving.

The terminal part, attached to a needle, is easily and quickly removed for autoclaving with the other endodontic instruments so that for each patient there is a sterilized terminal end with an attached needle. Spare needles can be kept on hand and quickly adapted should one become blocked or inadvertently fall on the floor.

The adapter not only removes fluid from the canal but also pieces of filling material that so often fall into the canals of lower teeth being treated. I have successfully removed a separated instrument from the canal of a lower bicuspid and lower molar

(Fig 5-11). This was done by first filing around the separated instrument and loosening it in the canal. Because of gravitational force the loose instrument tended to move toward the apex of the tooth. It could not have been removed from the canal except by a suction device of this type.

Very few paper points (approximately three per canal) are required for each case when using the endodontic suction adapter.

The dentist can work twice as fast with this device as by using paper points to dry the canal.

Dr. Goodin's address is: 2286 Carling Ave, Ottawa K2B 7G2.

The author expresses appreciation to Doctors Schilder and Levine of the Department of Endodontics, School of Graduate Studies, Boston University, who instructed him in the importance of debriding and shaping root canals.

Reviews/Analyse

Annotations

Atlas of Oral Surgery

B. J. Gans. St. Louis,
The C. V. Mosby Company, 1972.
239 p. Illus. \$29.95

Step-by-step procedures accompanied
by detailed illustrations make this a

useful manual on surgical techniques,
both simple and intricate. The author
covers principles underlying each pro-
cedure, and outlines possible pitfalls
to help the reader avoid complications.

Fundamentals of Oral Histology and Embryology

Vincent Provenza. Philadelphia
and Toronto, J. B. Lippincott
Company, 1972.
284 p. Illus. \$14.95

The material in this book ranges from
a generic review of the constituents of

the cell to in-depth treatment of the
oral structures with which the dental
student is concerned clinically.

The first chapter outlines cell struc-
ture and the morphological variations
which may be encountered in the
diverse cell types. Chapter 2 examines
the basic tissues of the body including
epithelium, glands, blood and lymph
nerve tissue, and so forth. The develop-
ment of the teeth and their adnexa are
outlined in chapter 3. The remaining
chapters cover the pertinent oral struc-
tures in topics ranging from "Aging
and Repair of Enamel" to "Pulp Injury
and its Treatment."

Each chapter is preceded by a help-
ful outline of its content.

Actinomycosis

Marcell Bronner and Max
Bronner. Bristol, John Wright &
Sons Limited, 1971. (Available
from The MacMillan Company
of Canada Ltd, Toronto)
355 p. Illus. \$25.75

This second edition surveys our knowl-
edge concerning the genus *Actinomyces*
with special reference to the disease,
actinomycosis.

Early chapters deal with the history
of the genus and related genera, their
distinguishing features, and methods
of culture, as well as the differential
diagnosis and treatment of the infection.

Elsewhere, the book provides a
compilation of personal and inter-
national research based on 560 cases
and 119 illustrations from clinics and
hospitals in Europe and America.

Die Quintessenz der Anwendung rotierender Dentalinstrumente

Karlheinz Kimmel. Berlin,
Buch- und Zeitschriften-Verlag
"Die Quintessenz," 1971.
149 p. Illus. DM14.50

This little German pocket book is
entirely devoted to rotary cutting
instruments used in dentistry and den-
tal laboratory technology. It describes
the fundamental principles, mechanics
and applications of various drills, burs,
abrasive stones, points and discs as
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IMPORTANT: This form is to be completed by those desiring advance registration and accommodation in Vancouver during the forthcoming convention. Please mail the completed form, and, where applicable, your cheque for \$45.00, to the CONVENTION BUREAU at the above address. **To receive your choice of accommodation, register early! Preregistrations will not be accepted after the end of August 1973.** After August 31, please make your accommodation arrangements directly with the hotel of your choice, and register at the

convention registration facilities in Hotel Vancouver, upon your arrival. The general scientific sessions will be at both Hotel Vancouver and the Hyatt Regency Vancouver. The commercial exhibits and most section meetings will be in the Hyatt. Registration facilities, ticket sales, and most major social functions will be in Hotel Vancouver. These two headquarters hotels are very close to one another, on diagonally opposite sides of the same intersection.

Please PRINT or TYPE requested information:

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ADDRESS: _____

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Group affiliation: (e.g. CDA Section (specify), or Exhibitors)

Please indicate first, second and third choice of hotel accommodation in column entitled Choices.

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_____ Hotel Vancouver
_____ Hyatt Regency Vancouver
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☐ Accommodation not required

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☐ Suite (Specify Type)

ARRIVAL DATE _____

TIME _____

DEPARTURE DATE _____

TIME _____

NOTE: Hotels will not normally hold a room beyond 6 p.m. unless a later time is specified.

The registration fee for dentists is \$45.00. Dentists' wives may register without charge, as may exhibitors. Make your cheque payable to CDA National Conventions.

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Français au verso

INSCRIPTION

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IMPORTANT: Cette formule doit être remplie par tous ceux qui désirent s'inscrire à l'avance et retenir une chambre pour le prochain Congrès qui aura lieu à Vancouver. Veuillez retourner cette formule dûment complétée ainsi qu'un chèque de \$45.00, au BUREAU DU CONGRÈS, à l'adresse ci-dessus. **Les meilleures chambres iront aux premiers inscrits! Les inscriptions prioritaires ne seront pas acceptées après août 1973.** A partir du 31 août, vous devrez faire vos réservations directement avec l'hôtel de votre choix et vous inscrire aux

guichets d'inscription du Congrès, à l'Hôtel Vancouver, à votre arrivée. Les séances scientifiques générales auront lieu à l'Hôtel Vancouver et à l'hôtel Hyatt Regency Vancouver. Les expositions commerciales et la plupart des réunions des sections auront lieu à l'hôtel Hyatt. Les Bureaux d'inscription, les ventes de billets et la plupart des fonctions sociales importantes auront lieu à l'Hôtel Vancouver. Ces deux hôtels qui serviront de centre principal sont très près l'un de l'autre, soit en diagonale en face de la même intersection.

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The Rockies Skyline. Photo courtesy Macleans Magazine.

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Dental caries in 506 young Ontario adults

Occlusal adjustment in periodontal therapy

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Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont, Oct 2-5
1975 St. John's, Nfld, Aug 17-20

I Fédération Dentaire I Internationale

1973 Sydney, Australia, July 15-20
1974 London, England, Sept 8-14

Royal College of Dentists of Canada

Part I Examinations (Basic Sciences) Sept 24, 1973. Applications and \$100 fee must be received before Mar 31, 1973.

Part II Examinations (Oral) Dec 7-8, 1973. Eligibility is based on successful completion of the Part I Examination, plus submission of required case histories, and the lapse of five years since the candidate began his graduate training. Written intent to sit this examination with \$100 examination fee must be received before Mar 31, 1973.

Application forms for the Part I Examinations and further information may be obtained from J. E. Speck, Secretary-Registrar-Treasurer, Suite 614, 170 St. George St, Toronto, Ont M5R 2M8.

Canadian Meetings

Canadian Public Health Association, at Queen Elizabeth Hotel, Montreal. Apr 24-27, 1973. Canadian Public Health Association, 1255 Yonge St, Toronto 7, Ont.

Les Journées Dentaires du Québec, à l'Hôtel Bonaventure, Montréal. 25-27 avril 1973. Denis LaFlamme, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. Apr 25-27, 1973. Denis LaFlamme, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of Saskatchewan, at Regina. May 4-5, 1973. T. E. Donovan, 205 McCallum Hill Bldg, Regina, Sask.

Ontario Chapter, Canadian Society of Dentistry for Children, at Royal York Hotel, Toronto. May 13, 1973. A. F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Royal York Hotel, Toronto. May 13-16, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont.

Canadian Academy of Oral Pathology, at Montreal. May 14-19, 1973. Dennis Forest, Faculté de chirurgie dentaire, Université de Montréal, CP 6128, Montréal 101, Qué.

Association des Spécialistes en Chirurgie Buccale du Québec, à Montréal. 15-16 mai 1973. Guy Maranda, 565 St-Jean, Québec 4, Qué.

American Academy of Oral Pathology, at Bonaventure Hotel, Montreal. May 15-19, 1973. G. G. Blozis, College of Dentistry, Ohio State University, Columbus, Ohio 43210, USA.

Northwest Academy of Dental Medicine, at the Empress, Victoria, BC. May 24-27, 1973. Gladys H. Under-

wood, 610 SW Alder St, Portland, Oregon 97205, USA.

Nova Scotia Dental Association, at Mountain Gap Inn, Smith's Cove, NS. June 1-2, 1973. S.G. Bagnall, PO Box 604, Halifax, NS.

Alberta Dental Association, at Lethbridge. June 7-8, 1973. R. D. Kinniburgh, Centre Village Mall, 1204 - 2nd Ave A N, Lethbridge, Alta.

Association of Canadian Faculties of Dentistry, at Château Montebello, Montebello, Que. June 12-15, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Western Canada Dental Society, at Winnipeg. June 27-30, 1973. J. P. Beattie, 308 Kennedy St, Winnipeg 2, Man.

Dental Hygiene Section, Western Canada Dental Convention, at Winnipeg Inn, Winnipeg. June 30, 1973. Mrs. Vivian Burdenium, 2 Peel Cres, Winnipeg, Man.

Northern Ontario Dental Association, at Kirkland Lake, Ont. Sept. 7-9, 1973. J. R. Brookfield, 2 Second St, Kirkland Lake, Ont.

Atlantic Provinces Dental Convention, at Charlottetown, PEI. Sept 16-19, 1973. S. G. Bagnall, PO Box 604, Halifax, NS.

Canadian Society of Oral Surgeons, at Mont-Gabriel Lodge, Mont Gabriel, Que. Oct 7-9, 1973. Pierre Surprenant, Suite 201, 230 King St W, Sherbrooke, Que.

Canadian Academy of Periodontology, at Vancouver. Oct 12-13, 1973. J. D. Stewart, 311 Rubidge St, Peterborough, Ont K9J 3P3.

Canadian Academy of Restorative Dentistry, at Vancouver. Oct 12-13, 1973. E. V. Gowda, Suite 201, 1590 Bellevue Ave, West Vancouver, BC.

Association of Canadian Faculties of Dentistry, at Vancouver. Oct 13, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Canadian Association of Orthodontists, at Vancouver. Oct 13-15, 1973. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask S7K 3M4.

Canadian Academy of Prosthodontics, at Vancouver. Oct 13-14, 1973. W. G. Woods, Suite 1125, 123 Edward St, Toronto, Ont M5G 1E2.

Canadian Academy of Endodontics, at Vancouver. Oct 14-15, 1973. P. R. Dow, Suite 1009, 925 W Georgia St, Vancouver 1, BC.

Canadian Society of Public Health Dentists, at Vancouver. Oct 14-17, 1973. J. M. Conchie, 14265-56th Ave, Surrey, BC.

Canadian Dental Hygienists Association, at Vancouver. Oct 14-18, 1973. Linda J. Hunter, 3350 Cedar Crescent, Vancouver 9, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Newfoundland Dental Association, at Holiday Inn, St. John's, Nfld. Nov 7-10, 1973. Gordon Anthony, PO Box 9505, St. John's, Nfld.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

Les Journées Dentaire du Québec, à l'Hôtel Bonaventure, Montréal. 1-3 mai 1974. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. May 1-3, 1974. Mr. Bastien, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Vancouver. May 1-4, 1974. College of Dental Surgeons of BC, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Ontario Chapter, Canadian Society of Dentistry for Children, at Four Seasons-Sheraton Hotel, Toronto. May 12, 1974. A. F. Dungy, Ontario Crip-

pled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 12-15, 1974. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont.

Alberta Dental Association, at Palliser Hotel, Calgary. May 29-31, 1974. J. R. Duncan, 306, 1711 - 4th St SW, Calgary, Alta.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R. C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor, Ont. Oct 2-5, 1974. J. M. Conchie, 14265 - 56th Ave, Surrey, BC.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

International Meetings

International Association for Dental Research, at Washington, DC. Apr 11-15, 1973. A. R. Frechette, 211 East Chicago Ave, Chicago, Ill 60611, USA.

International Congress of Odontology and National Spanish Congress, at Barcelona, Spain. Apr 29-May 5, 1973. A. de Udaeta, Tapineria, 10, entlo, Barcelona, Spain.

Royal Society of Health, at Eastbourne, England. Apr 30-May 4, 1973. The Secretary, Royal Society of Health, 13 Grosvenor Place, London, SW1X 7EN, England.

Philippine Dental Association, at Manila. May 8-12, 1973. Executive Secretary, Philippine Dental Association, PO Box 1142, Manila, Philippines.

British Dental Association, at Southport, England. June 11-15, 1973. J. N. Peacock, 64 Wimpole St, London W1M 8AL, England.

(Continued on page 215)



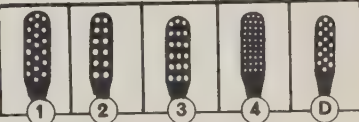
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International Symposium on Biological Medicine, at Lausanne, Switzerland. June 20-24, 1973. III International Symposium on Biological Medicine, Chemin du Frêne 11, CH-1004 Lausanne, Switzerland.

American Dental Society of Europe, at Lucerne, Switzerland. July 1-4, 1973. James Page, 65 Mount Ephraim, Tunbridge Wells, England.

4^e Congrès International de Pédodontie, à Paris. 10-13 juillet 1973. Secrétariat Société Française de Pédodontie, 33 rue Poissonnière, Paris 2^e, France.

Australian Society of Endodontology, at Sebel Town House, Sydney, Australia. July 12-13, 1973. E. H. Ryan, 185 Elizabeth St, Sydney, 2000, Australia.

International Implant Congress, at Sydney, Australia. July 12-14, 1973. T. T. Vajda, PO Box 1478, GPO Sydney, NSW, Australia, 2001.

International Association of Oral Surgeons, at Sydney, Australia. July 14-20, 1973. Sir Terence Ward, Royal

College of Surgeons of England, 35/43 Lincoln's Inn Fields, London, WC2A 3PN, England.

Fédération Dentaire Internationale and Australian Dental Congress, at Sydney, Australia. July 15-20, 1973. G. H. Leatherman, 64 Wimpole St, London WIM 8AL, England.

Rhodesian Dental Congress, at Victoria Falls, Rhodesia. July 31-Aug 3, 1973. A. G. Winchester, PO Box 1367, Salisbury, Rhodesia.

Third International Orthodontic Congress, at Royal Festival Hall, London, England. Aug 13-18, 1973. W.J. Tuley, 43 Charles St, London WIX 7PB, England.

New Zealand Dental Association, at Queenstown, NZ. Sept 20-22, 1973. Alastair Murray, 69 Don St, Invercargill, NZ.

Japanese Association for Dental Science, at Tokyo. Sept 22-26, 1973. J. Okamura, c/o Nippon Dental College, Fujimi, 1-Chome Chiyoda-ku, Tokyo, Japan.

First French Congress of Stomatology and Maxillofacial Surgery, at Paris. Sept 27-29, 1973. Secrétariat Mme Palaysi Institut de Stomatologie, 47 blvd de l'Hôpital, 75013 Paris, France.

Portuguese Congress of Stomatology, at Lisbon, Portugal. Oct 17-20, 1973. Secretaria Geral do VI Congresso Português de Estomatologia, Av. R. Amélia-36-R/C, Dtº, Lisboa -5, Portugal.

International Symposium on the Immunoglobulin A System, at University of Alabama, Birmingham. Oct 23-25, 1973. F. W. Kraus, Box 103, University Station, Birmingham, Ala 35294, USA.

American Dental Association, at Houston, Texas. Oct 28-Nov 1, 1973. C. G. Watson, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Association Dentaire Française, à Parc des Expositions, Porte de Versailles, Paris. 13-18 nov 1973. Jacques Charon, 22 avenue de Villiers, 75-Paris 17^{ème}, France.

1973 C.D.A. CONVENTION

Vancouver, B.C.

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INDICATIONS: Carbocaine (brand of mepivacaine) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS: Carbocaine is contraindicated in patients with a known hypersensitivity to the amide type local anesthetics or to methylparaben which is added to the multiple dose vial solutions.

WARNINGS: RESUSCITATIVE EQUIPMENT AND DRUGS SHOULD BE IMMEDIATELY AVAILABLE WHEN ANY LOCAL ANESTHETIC IS USED.

Usage in Pregnancy: Safe use of Carbocaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

Solutions containing a vasoconstrictor, particularly epinephrine or norepinephrine, should be used with extreme caution in patients receiving antidepressants of the triptyline or imipramine types or MAO inhibitors

because a severe prolonged hypertension may occur.

PRECAUTIONS: The safety and effectiveness of Carbocaine depend upon proper dosage, correct technique, adequate precautions, and readiness for emergencies.

The lowest dose that results in effective anesthesia should be used to avoid high plasma levels and serious undesirable systemic side effects. Injection of repeated doses of Carbocaine may cause significant increases in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slow metabolic degradation.

Tolerance varies with the status of the patient. Debilitated, elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their age and physical status.

Solutions containing a vasoconstrictor should be used cautiously in the presence of diseases which may adversely affect the patient's cardiovascular system. In persons

with known drug sensitivities or allergies Carbocaine should be used cautiously.

Serious cardiac arrhythmias may occur if preparations containing a vasoconstrictor are employed in patients during or following the administration of chloroform, halothane, cyclopropane, trichloroethylene, or other related agents.

ADVERSE REACTIONS: Adverse reactions result from high plasma levels due to excessive dosage, rapid absorption or inadvertent intravascular injection. Hypersensitivity, idiosyncrasy, or diminished tolerance may also be the cause of reactions. Reactions due to overdosage (high plasma levels) are systemic and involve the central nervous system and the cardiovascular system.

Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may occur followed by drowsiness, convulsions, unconsciousness, and possibly respiratory arrest.

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Consider these two facts:

1. Most of today's dental procedures are brief. Patients dislike having their faces numb for hours after they've left the office.

2. The modern local anesthetic solution—Carbocaine 3%—provides unsurpassed anesthesia that allows ample time for routine procedures, an average of 20 minutes operating anesthesia in the upper jaw and 40 minutes in the lower, but doesn't linger a great deal longer than necessary.

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UNIQUE
Carbocaine[®] HCl 3%
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without vasoconstrictor

**The modern local anesthetic
adequately effective by itself**

Reactions involving the cardiovascular system include depression of the myocardium, hypotension, bradycardia, and even cardiac arrest. Treatment of a patient with toxic manifestations consists of maintaining an airway and supporting ventilation using oxygen, and assisted, or controlled respiration as required. Supportive therapy of the cardiovascular system consists of using vasopressors, preferably ephedrine. Convulsions may be controlled by the use of oxygen. If convulsions persist, the intravenous administration in small increments of an ultra short-acting barbiturate (i.e., thiopental, thiamylal) may be used. If these are not available, a short-acting barbiturate (secobarbital, pentobarbital) may be used. Intravenous barbiturates should only be used by those familiar with their use. Allergic reactions are characterized by cutaneous lesions of delayed onset, or urticaria, edema, and other manifestations of allergy. The detection of sensitivity by skin testing is of doubtful value.

DOSAGE AND ADMINISTRATION: As with all local anesthetics the dose varies and depends upon the area to be anesthetized, vascularity of the tissues, individual tolerance and the technique of anesthesia. The lowest dose needed to provide effective anesthesia should be administered. For specific techniques and procedures refer to standard dental manuals and textbooks.

For infiltration and block injections in the upper or lower jaw the average dose of 1 cartridge will usually suffice. Each cartridge contains 1.8 ml. (36 mg. of 2% or 54 mg. of 3%). This dose may be doubled if necessary to effect anesthesia. The maximum dose should not exceed 3.6 mg. per pound of body weight.

Any unused portion of a cartridge should be discarded.
HOW SUPPLIED: Carbocaine (brand of mepivacaine) HCl 3% without vasoconstrictor—each ml. contains: Carbocaine HCl, 30.0 mg.; sodium chloride 3.0 mg.; and water for injection. Methylparaben 1.0 mg. is added to the

solution and pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Carbocaine HCl 2% with Neo-Cobefrin (brand of levonordefrin) 1:20,000—each ml. contains: Carbocaine HCl 20.0 mg.; Neo-Cobefrin, 0.05 mg.; sodium chloride 4.0 mg.; acetone sodium bisulfite, not more than 2.0 mg.; and water for injection. Methylparaben 1.0 mg. and sodium lactate 1.0 mg. are added to the solution and the pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Both formulas are available in 1.8 ml. cartridges, cans of 50, to fit the Carpule® Aspirator; and in 20 ml. multiple dose vials.

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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

Tax deferment on income received in respect of services yet to be rendered

Practising dentists occasionally receive payment in advance for professional services that will not be completely rendered until the next or succeeding years. For example, payment might be received in advance for orthodontic services or reconstruction services that will take several months or years to complete.

Our present Income Tax Act requires the dentist or other professional who receives payments in respect of services which have yet to be rendered to include these payments as income for tax purposes in the year the payments are received, even though the services have not been rendered. In this respect the 'professional' has been treated differently than other taxpayers who under paragraph 20(1) (m) of the Act are allowed to deduct in computing their income amounts which have been included in income from business for the year to the extent that the amount represents a reasonable hold-back for goods or services that will be delivered or rendered after the end of the year. In other words, the professional man did not have the same opportunities for tax deferment as did other taxpayers.

Dentists will be pleased to learn that the February 19, 1973 budget amended the Income Tax Act

so that a professional is now allowed to deduct a reasonable reserve for services that it is anticipated will be rendered after the end of the year. In effect, this puts the dentist and other professionals in the same position as other taxpayers reporting their income on an accrual basis. The change in the law is retroactive to the 1972 taxation year.

Two examples of how this new ruling might work to the advantage of the dentist are as follows:

1. Total predetermined cost of a dental service — \$1,500.

In 1972, 1/2 the total service (\$750) is rendered and billed. The patient, however, pays the total bill (\$1,500). The treatment is completed in 1973.

		Income reported for tax purposes
1972		
Amount received in 1972	\$1,500	
Services completed and billed	750	\$750
Reserve allowed in this year which will be included in income for the following year	<u>\$ 750</u>	
1973		
Amount received in 1973	—	
Services completed		
Reserve from previous year		\$750

2. Total predetermined cost of a dental service — \$1,500.

	1972	1973	1974
Percentage of total account billed* in year	50%	20%	30%
Percentage of services actually rendered in year	33 1/3%	33 1/3%	33 1/3%

(continued on page 226)

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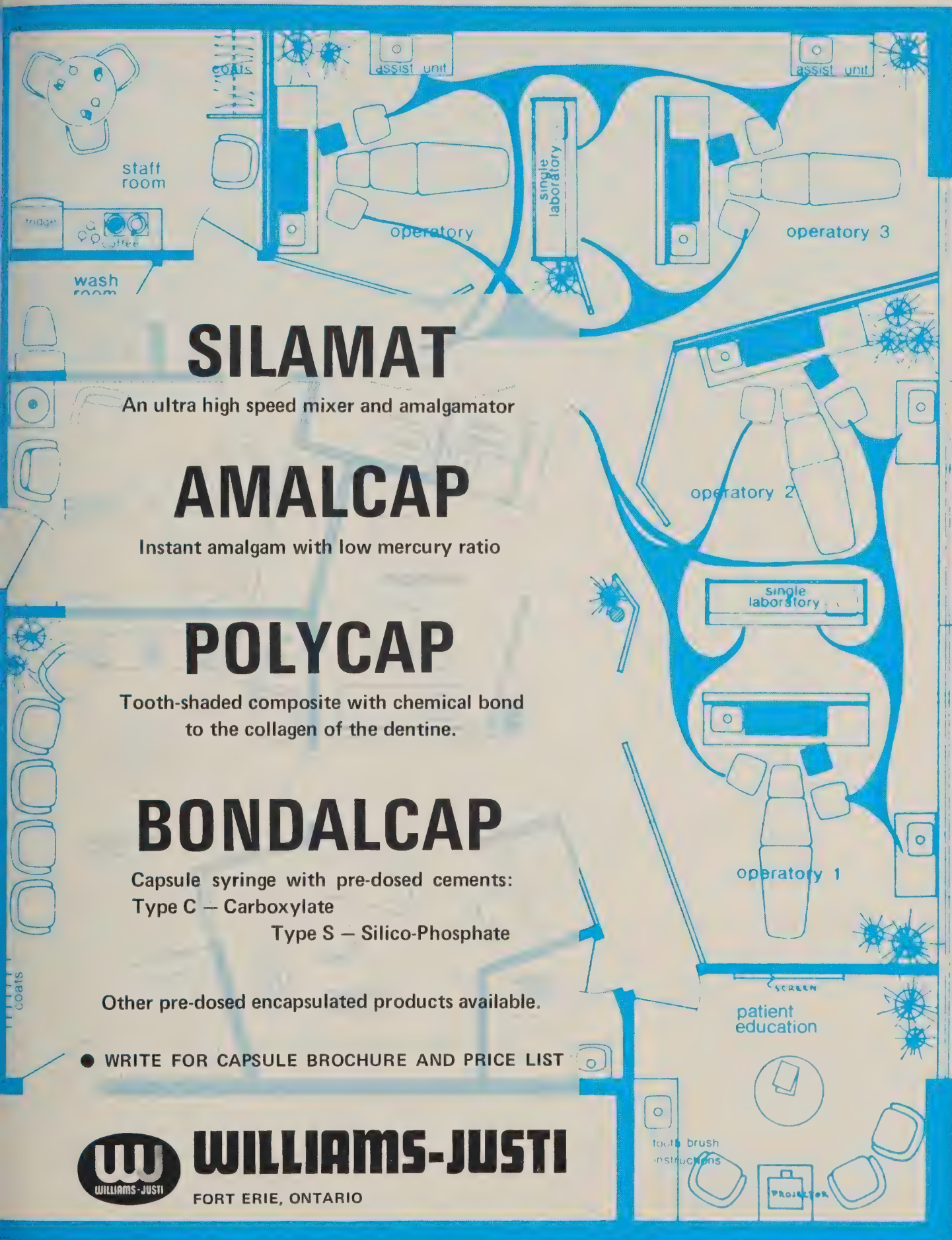
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VANCOUVER '73

CDA National Convention

The CDA national convention in Vancouver will kick off with an "Octoberfest" on Sunday, October 14. Opening ceremonies will begin at 8:00 pm. After the formal greetings delegates and their guests will be able to relax and enjoy the music of a ten piece Bavarian band as well as a troupe of dancers. Decorations and service will transport the party to old Munich for an evening of relaxation and renewing friendships before the serious aspect of the convention begins next day.

On Monday morning the convention begins in earnest. Dr. Miet Kamienski, chairman of the Scientific Committee is preparing interesting and innovative programs of speakers as well as a

diversified agenda of capsule and table clinics. Clinicians, topics and scheduling will be available in the forthcoming *Convention News Bulletins* so participants will be able to plan to attend those which are of interest to them.

As a break between morning and afternoon sessions, a sponsored luncheon will be served at the Hyatt Regency Monday and Tuesday. This will also give participating dentists a chance to view the booths of approximately 125 industrial exhibitors whose latest equipment and services will be on display.

Luncheon on Wednesday will be sponsored by the CDA. It is hoped that all delegates make a special point of attending this affair as the highlight is the installation of the new president.

The highpoint of the CDA convention social whirl is the President's Party. Dr. Peters, outgoing president of

the CDA, will host this gala affair in the BC Ballroom of the Hotel Vancouver. Carse Sneldon and his orchestra will provide music for dancing. Additional entertainment will be arranged and announced at a later date.

In addition to the planned activities, attending members and their wives will have the opportunity to explore Vancouver. Often called the Garden of the Pacific, Vancouver offers diverse entertainment—beautiful Stanley Park, North America's second largest Chinatown, shopping, sightseeing and nightlife. This convention offers a perfect blend of education and relaxation in Canada's beautiful west.

If you have finalized plans for attending, the National Conventions Committee would greatly appreciate early registration. This allows us to book hotel space of your choice and prevents last minute disappointments.

The Association

Survey of dental research in Canada

The Canadian Dental Association's Council on Research is now in the process of conducting a major survey designed to establish the current status of dental research in Canada.

The survey is an extremely important one. The Council on Research plans to use the results for further negotiations with governmental and other agencies which influence dental research in this country.

Questionnaires have been sent to many individuals, institutions, universities and industrial firms in an effort to include all dental researchers in the country.

Anyone conducting dental or oral research in Canada who has not yet received a survey questionnaire should contact: Dr. A. P. Angelopoulos, chairman of the CDA Committee on the Survey of Dental Research in Canada, Faculty of Dentistry, Dalhousie University, Halifax, NS.

Canada and the Provinces

Newfoundland dentists open first low-cost denture clinic

The Newfoundland Dental Association has opened the first in a planned series of low-cost denture clinics to be set up throughout the province.

The St. John's clinic, opened recently in the city's downtown area, is being staffed on a five-day-per-week

basis and it is anticipated that evening hours will be maintained if there is a demand for such service.

The clinic provides standard dentures in a fee range of \$60 to \$70 per denture, as compared to the usual \$100 which is the fee recommended by the association.

Initially, the clinic was staffed by Dr. E. P. Cavanaugh of St. John's, a recently retired general practitioner. The association is now developing a roster of volunteer dentists to provide additional staffing.

The clinic was opened following announcement by the NDA that it would provide such services "so that the health of citizens will not be jeopardized" by having to patronize denturists for economic reasons.

In a statement announcing the low-cost denture plan, the association said poor dental health in Newfoundland was "mainly the result of the poor economic conditions of past years and the difficulty of servicing a population in sparsely settled and isolated districts."

The NDA noted that the common first priority of both the government and the dental profession in recent years has been the successful establishment of the children's dental care program in the province.

"Now that the children's program has become well established, the dental profession recognizes that a serious problem remains in respect to older members of the population who have lost many or all of their teeth and are in need of full or partial dentures."

The association has asked the Newfoundland Minister of Health to establish a three year diploma course to train dental technologists. It was proposed that such technologists would be similar to the denture therapists planned for Ontario and would be able to take impressions and bite registrations and to make and fit complete upper or lower dentures, under the supervision of a dentist.

The NDA has also requested that the government consider granting assistance to welfare recipients for part or all of the expense involved in low-cost dentures.

In addition, dentists have asked the provincial government to mount a recruitment program to bring new dentists to Newfoundland, either from other parts of Canada or from outside the country, and to offer subsidies where necessary to encourage establishment of practices in communities not now being served by a dentist.

A select committee of the Newfoundland House of Assembly has announced public hearings throughout Newfoundland and Labrador on the question of whether denturists should be licensed to serve the public directly. The hearings began in Corner Brook and are scheduled to conclude in St. John's early in April.

CDA tape cassette program gets points in Manitoba

At a recent general meeting, the Manitoba Dental Association approved a motion from its membership which calls for acceptance of the CDA tape cassette series on continuing education, offered through Medifacts Ltd, as a method whereby a dentist may obtain continuing education points. The number of points are to be determined by the association's board of directors.

Health minister outlines dental health plans for BC

British Columbia's Health Minister Dennis Cocke has promised that public dental care for children and the aged would be established in the province by the end of 1973. The dental care programs would be introduced on a

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We would be pleased to send you a complimentary set of Tek Action oral health products for your examination if you request them on your professional letterhead or enclose your professional card. We think you'll agree it makes good sense to recommend these products to your patients.

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**Help your patients combat plaque.
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small scale basis as part of the government's experimental health clinics.

Speaking to delegates attending the Vancouver and District Dental Society's Midwinter Clinic, Mr. Cocke said that experimentation is necessary and urged dentists to avoid confrontation with the government in favour of consultation as new programs are brought in that affect the profession.

Mr. Cocke said there must be more integration of health services in general to avoid duplication and gaps in service and he called on the dentists to co-operate in this.

The health minister wants to get hospitals and dentists working together to provide emergency service. This, he said, would fill the gap between dentists' hours and night and weekend emergencies.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on February 28, 1973:

Guaranteed Fund \$10.048;

Fixed Income Fund \$13.877;

Common Stock Fund \$31.168.

Total assets (market value) of the plan were \$14,515,605.30.

The following portfolio purchases occurred during the preceding month: 2,300 shares Fields Stores; 900 shares Zellers; and 3,326 CIF Conventional Mortgage Fund units.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Research

Adhesive cure for leakage around fillings

A new adhesive sealant which shows promise of preventing leakage under fillings was described to scientists attending the 50th annual session of the International Association of Dental Research in Las Vegas, March 23-26.

Zia Scheykoleslam of Rochester, New York, said the adhesive is first placed on the enamel surrounding the cavity margin and hardened by ultraviolet light. A plastic filling material is then placed in the cavity, extending over the primer coat as a feather edge. The filling material creates a strong bond with the sealant, forming an integral unit, he said.

More than 900 Canadian dentists are knocking on doors

"Early response to the creation of the Million Dollar Capital Fund for Dentistry is most encouraging as dentists from every part of Canada are making generous donations to this important charitable foundation," said J. E. Abra, of Winnipeg, national chairman of the CFDE Capital Fund Campaign.

"In eastern Canada the Atlantic dentists started promptly in late February under the able leadership of M. J. Cripton, a trustee of the CFDE and campaign chairman for New Brunswick; G. M. Jensen, campaign chairman for Nova Scotia; J. R. Robertson, campaign chairman for Prince Edward Island; and W. J. Dwyer, campaign chairman for Newfoundland," stated Dr. Abra.

"Apparently the Easterners take their cue from the Atlantic time zone and get an hour's head start on the rest of the country," said Dr. Abra.

"Contributions are coming in through the provincial chairmen in excellent numbers and, if the initial activity being generated is a good indication, we can expect to report a very successful campaign result."

Dr. Abra went on to say: "We have already received donations and pledges

from hundreds of dentists for amounts of \$200 to \$500 and more. We know now of at least eight generous donations of \$1,000."

"From dental students we have received one donation of \$200, with lesser amounts from others, which is a wonderful example of their vital interest in their chosen profession and its future strength."

"All this is very encouraging to the more than 900 Canadian dentists who are giving so freely of their time to call upon their confrères this spring for capital donations for this charitable fund that is controlled and administered by the dentists of Canada," said the national campaign chairman.

M. E. Bower, chairman of the Board of Trustees of the Canadian Fund for Dental Education, pointed out that "across all Canada there is a growing awareness of the top position of dentistry in the social sciences."

"A Million Dollar Capital Fund will give great continuity to the profession's future support of advanced training in dental education and research. This can only add to our shared professional advantages."

DEATHS

Broom, John Cameron Wilson. 80. Kingston, Ont. Royal College of Dental Surgeons of Ontario, 1917. 18-1-73.

Freedhoff, Samuel. 69. Downsview, Ont. University of Toronto, 1926. 19-2-73. Survived by Pearl (wife); Stephen (son); and Mrs. Aubrey Golden (daughter).

Murray, Waldo H. 85. Brighton, Mass, USA. Tufts University, 1909. 10-1-73. Survived by Alice (wife); Dana (son); Mrs. Ellena Fish and Mrs. Menta Rollman (daughters); and eight grandchildren.

Robinson, Leslie G. 77. Galiano, BC. McGill University, 1923. 6-2-73. Survived by Margaret Elspeth (wife); Malcolm (son); Mrs. R. Aileen Knight and Mrs. D. Gail McNaughton (daughters); Dwight (brother); and six grandchildren.

Ross, Hugh Alexander. 89. Toronto. Royal College of Dental Surgeons of Ontario, 1920. 26-2-73. Survived by Mrs. G. Hopton and Mrs. D. W. Geiger (daughters) and nine grandchildren. Associate member CDA.

Snow, Cecil Montague. 80. Calgary. Baltimore College of Dental Surgery, University of Maryland, 1916. 15-1-73. Survived by Don and Jim (sons); Mrs. Frances Ludwig, Mrs. Claire Barriger and Diane (daughters). Associate member CDA.

YOUR SECURITY

This is the eighth in a series of articles on insurance and investment programs available through the Canadian Dental Service Plans, Inc, to the dental profession.

A new package of business and personal insurance available only to members of the Canadian Dental Association has attracted "a very healthy interest" from dentists throughout the country.

Preliminary announcement of the new broad coverage program was made last August by Canadian Dental Service Plans, Inc with more detailed information distributed to all dentists in December.

There are four major areas of coverage under the Business and Personal Insurance Program, as it is officially known. The four areas, as outlined by W. Gene Jackson, administrator of CDSPI, are: special office package, automobile, homeowner/tenant package and pleasurecraft coverage.

Special office package — A variety of six prime areas of coverage are available under this plan. The first is insurance coverage for your office building, if you own one. The insurance covers all normal risks such as fire, lightning, explosion, impact by aircraft or vehicles, riot, smoke, windstorm and hail.

Office content insurance is included in the package. This is a special "all risk" floater which covers all of the property in your office and it includes any improvements you may have made as a tenant. The underwriters recommend that your coverage should equal full replacement value.

The third category is Comprehensive Business Liability coverage although it does not include malpractice insurance. The coverage does include insurance against bodily injury and property damage, for premises liability, blanket contractual liability, contingent liability, tenants fire legal liability, employer's liability and voluntary medical payments.

A fourth area of coverage provides you with protection in the event of liability being assessed against you arising from operation of an automobile, not owned by you, but used on your behalf. For instance, if an employee uses his car on a trip for you and has an accident, your liability is included.

If you own your building, you may wish to include boiler insurance in your office package.

Sixthly, the basic coverage of the special office package provides for the following features:

- \$10,000 on contents of your office
- \$1,000 on valuable papers and records
- \$2,000 on extra expenses incurred to maintain your practice
- \$1,000 on currency, securities, gold and other precious metals.
- \$5,000 on accounts receivable should these records be lost or destroyed by an insured peril
- \$1,500 on rental value.

Automobile insurance — CDSPI has been successful in gaining a full protection package for members. Dentists may elect a wide range of automobile coverages. Liability insurance for amounts of up to \$1 million may be purchased to cover you or any authorized driver against legal liability for bodily injury to, or death of, any person or damage to property of others.

"No fault" accident benefits are available too. This insurance protects the owner of the car, his wife and children living at home, regardless of who is at fault, for medical, rehabilitation and funeral expenses.

Physical damage to your automobile may be insured as well. You may choose either collision coverage or comprehensive insurance. All-perils coverage may be elected in place of collision and comprehensive.

Homeowner/tenant package — This decidedly personal form of insurance can be custom planned for your requirements. You may purchase coverage for your residence as well as seasonal dwellings such as cottages, or ski chalets. You can even provide coverage for out-buildings such as garages or tool sheds. Of course, you can also protect the contents of these with this program. If you are a tenant, the plan is adaptable to cover this as well, except for insurance on the buildings themselves.

Other features include "additional living expense" coverage which helps pay the cost of living away from home while your dwelling is being repaired following an insured loss. You can also purchase insurance to protect you from claims for damages resulting from bodily injury to others, or from the damage of property of others for which you are liable. This coverage is provided at home or away from home. "Medical payment insurance" protects you if someone is accidentally injured while on your premises. "Voluntary property

damage" covers you for accidental damage or destruction of property of others.

Finally, a unique provision of the package can provide you with up to \$1 thousand protection against charges made against your account from stolen or lost credit cards. In addition, you can be protected against forged cheques and counterfeit money.

Pleasurecraft coverage — If you own boats, snowmobiles, dunebuggies, motor scooters or other pleasurecraft, you can insure these against physical loss from external perils you cannot control. You can also get coverage to protect you in the event of bodily injury to, or damage to the property of, others caused by the operation of your pleasurecraft. Medical payments for injury to passengers is available too.

Unlike many insurance plans, application for coverage under the Business and Personal Insurance Program can be made at any time and, of course, as with all CDSPI plans, participation is optional to members of the CDA.

Premiums for the new program are payable quarterly and are directed through CDSPI. One premium pays for any or all of the coverages selected.

"As our experience with this program grows, we anticipate that we will be able to adjust our premiums regularly in order to keep them as low as possible. Naturally, the more dentists who participate, the lower we'll be able to keep the rates," says Mr. Jackson.

Getting into the plan is simplicity itself. Application forms are available from CDSPI at 230 St. George St, Toronto, M5R 2P1, Ontario. Mr. Jack-

son notes that the Canada-wide organization of Marsh and McLennan Limited are administrators of the plan and their coast to coast offices are staffed with trained insurance counsellors able to aid you in completing applications. In Quebec, the counsellors are Pratte-Morrisette, an affiliate company of Marsh and McLennan.

The use of CNA Assurance as the underwriters benefits dentists immensely. This national company has offices coast to coast as well, and this will speed all claims processing for participating dentists.

The CDA Business and Personal Insurance Program is designed to permit total flexibility of coverage for the individual dentist taking into consideration his special needs and requirements. The choice of national organizations such as Marsh and McLennan as administrators and CNA Assurance as underwriters means personal attention to each dentist in the building of his individual insurance plan.

This article concludes our eight-part series outlining the various insurance, investment and estate needs of the average dentist. These needs have been recognized by the CDA and through their Council on Insurance and Investment and through their chosen not-for-profit administrative agency CDSPI provide a convenient method of achieving financial security. If you have questions about any aspect of investment, estate planning, retirement plans or insurance packages, please write to CDSPI at any time. Literature covering each plan is available.

It is hoped that in the future other articles will appear when space permits in the Journal further explaining the actions and philosophies of your insurance and investment council.

EXECUTIVE DIRECTOR'S PAGE

(continued from page 218)

		Income reported for tax purposes
1972		
Amount billed in this year (50%)	\$ 750	
Reserve allowed in this year which will be included in income for the following year	\$ 250	
Amount included in income for this year (33 1/3%)	\$500	
1973		
Amount billed in year (20%)	\$ 300	
Reserve from previous year added back	\$ 250	
	\$ 550	
Reserve allowed	50	
Amount included in income for year (33 1/3%)	\$500	

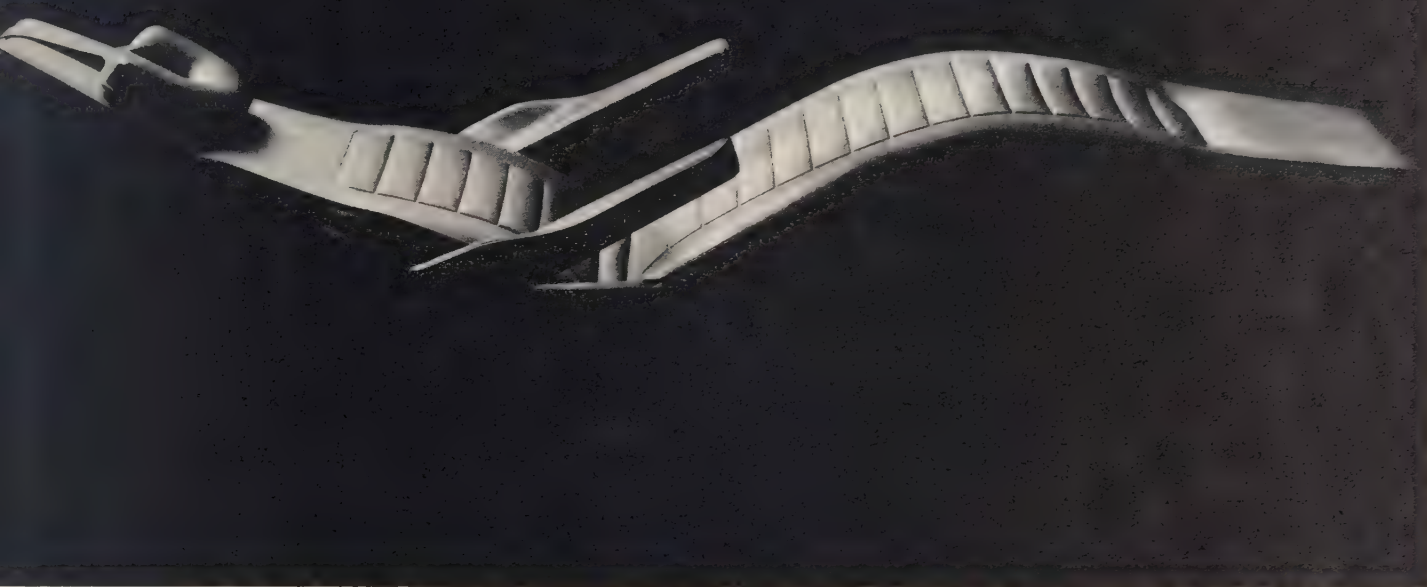
	Income reported for tax purposes
1974	
Amount billed in this year (30%)	\$ 450
Reserve from previous year added back	\$ 50
	\$ 500
Amount included in income for this year (33 1/3%)	\$500
Total income reported	\$1,500

*Every amount that becomes receivable by the doctor in the year must be included in income for the year. An amount becomes receivable on the earliest of:

- (1) the day upon which the account is rendered,
- (2) the day upon which the account would have been rendered if there had been no undue delay, and
- (3) the day upon which the doctor is paid.

Dentists should determine if this tax deferment mechanism is applicable and advantageous to them before submitting their 1972 tax returns. If so, payment of the appropriate tax can be deferred until a later date.

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L'Association

Nominations à l'ADC

Mademoiselle Beverley Nicholl a été nommée secrétaire du Bureau des affaires étudiantes nouvellement constitué au sein de l'Association.

La création de ce nouveau service centralise sous une direction unique toutes les activités étudiantes. Cette décision fut prise afin d'améliorer l'administration des besoins résultant du nombre croissant d'étudiants intéressés aux affaires de l'Association dentaire canadienne et de fournir l'assistance nécessaire aux comités engagés dans ce domaine en plein essor.

Le Bureau des affaires étudiantes a pour objectif d'améliorer la liaison entre les étudiants et les autorités des quartiers généraux, d'encourager les membres étudiants à participer aux affaires de l'Association et de s'efforcer d'amener tous les étudiants dentaires à devenir membre de l'Association. Actuellement 841 étudiants en font déjà partie.

En plus de ses nouvelles responsabilités, en qualité de secrétaire du Bureau des affaires étudiantes, Mademoiselle Nicholl assume aussi celle d'administratrice du test. Avant de passer au personnel de l'ADC, elle fut à l'emploi de l'Ontario Institute for Studies in Education où elle s'occupait directement des étudiants diplômés de l'Université de Toronto.

Monsieur Jurij Bilyk de Toronto a été nommé officier d'information à l'Association dentaire canadienne. En annonçant cette nomination, le docteur W. G. McIntosh, directeur général de l'ADC, a précisé que Monsieur Bilyk dirigera le Bureau d'information de

l'Association et assumera la responsabilité des relations extérieures avec les gouvernements, les médiums d'information et le public.

Monsieur Bilyk est diplômé de l'Université Carleton, d'Ottawa et compte sept années d'expérience dans le domaine des relations publiques. Il a été à l'emploi du gouvernement fédéral en qualité d'officier d'information au ministère des Affaires indiennes et du Développement du Grand Nord. Récemment, il a aussi été officier d'information au service de la Commission scolaire séparée du comté de Dufferin-Peel. Monsieur Bilyk est entré en fonction le 1er février dernier. Il remplit le poste occupé précédemment par Monsieur Stephen Bitten, qui a remis sa démission récemment.

Le Canada

L'absorption de mercure par le personnel dentaire à l'étude dans l'Ontario

Le numéro de juillet 1972 du Journal présentait un compte rendu d'une étude-pilote entreprise dans l'Ontario sur l'absorption de mercure par le personnel dentaire. Cette enquête a démontré que 10 pour cent des personnes examinées révélaient des taux élevés de mercure.

Le ministre de la Santé nationale et du Bien-être social a recommandé qu'un octroi soit versé pour la poursuite de l'enquête. Au moins 1,000 volontaires de la profession dentaire de l'Ontario sont requis pour réaliser ce projet.

Les principaux enquêteurs, les professeurs J. H. Hibberd et D. C. Smith de la Faculté de dentisterie de l'Université de Toronto adressent actuellement

des renseignements, des formulaires de demande et des dossiers à tous les dentistes de la province dans le but d'obtenir leur collaboration et celle de leurs assistants. L'administration des examens sera gratuite et tous les résultats seront communiqués confidentiellement.

On demande instamment aux dentistes et aux assistants dentaires de l'Ontario de prendre une part active à cette étude importante.

Attention prioritaire des dentistes de l'Ontario au service de prothèses à coût peu élevé

La profession dentaire de l'Ontario accordera un statut prioritaire au service de prothèses à bas prix.

Des mesures récentes adoptées par le gouvernement de l'Ontario touchant la Loi des techniciens dentaires expriment clairement que le gouvernement compte sur la profession dentaire pour répondre au besoin du public d'obtenir de prothèses à bas prix.

Le 16 décembre, l'Assemblée législative de l'Ontario a approuvé la Loi des denturo-thérapeutes (denture therapists) (projet de loi 246) et les amendements à la Loi dentaire (projet de loi 204). Ces projets de lois furent adoptés à la suite d'audiences publiques du Comité de développement social de l'Assemblée législative qui lui permit d'entendre aussi des délégués de l'Association dentaire de l'Ontario et du Collège royal des chirurgiens dentistes. Des représentants du public et de la Société des techniciens dentaires eurent aussi l'occasion d'exprimer leurs opinions.

Le projet de loi 246 contient des dispositions essentiellement identiques à celles qui sont proposées par l'ADO et réclame que les denturo-thérapeutes fassent preuve d'une certaine formation et travaillent exclusivement sous la surveillance du dentiste. Il remplace le projet de loi 203 présenté à l'Assemblée en juin dernier et dont les dispositions auraient permis aux techniciens dentaires de transiger directement avec le public. Les amendements à la Loi sur la dentisterie augmentent le montant des amendes imposées pour l'exercice illégal de la prothèse. Il accorde aussi au Collège royal des chirurgiens dentistes la responsabilité de tenir à jour la liste des dentistes qui acceptent de

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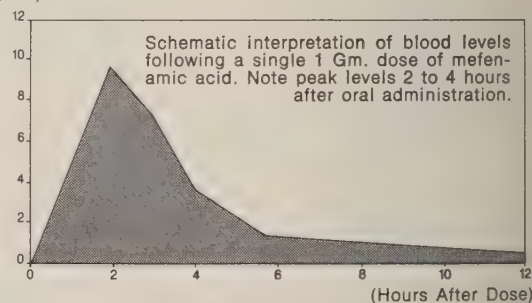
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Le Bureau des Gouverneurs de l'Association dentaire de l'Ontario ainsi que les représentants d'un certain nombre de sociétés dentaires se sont réunis à Toronto, en janvier, afin de dresser les plans destinés à développer les services de prothèse à bas prix déjà en opération depuis 12 mois. La publicité destinée à faire connaître ce genre de service est déjà en cours et l'on voit à ce que le programme couvre toute la province.

Les dentistes sont priés de signaler toutes réactions nocives entraînées par les drogues

Lors de la réunion annuelle de 1972 de l'Association canadienne des consommateurs, les délégués ont adopté une résolution réclamant qu'un certain nombre d'associations professionnelles prennent l'initiative de réclamer instamment que leurs membres signalent toutes réactions nocives entraînées par les drogues.

La résolution reflète l'intérêt crucial des membres de l'ACC touchant le besoin d'un système complet de surveillance thérapeutique au Canada. Cet intérêt porte principalement sur trois aspects du problème déterminé par l'ACC et qui étaient à la base de la résolution:

1. Des preuves confirment que les réactions nocives entraînées chez les humains par la consommation de drogues à des fins thérapeutiques constituent un problème sérieux dont la gravité est masquée par l'absence d'un système d'envergure permettant d'établir un rapport valable sur ces réactions.

2. Les autorités médicales internationales s'intéressent aux questions de l'application d'un traitement approprié de la drogue, de ses effets à long terme, de son identification, des prédispositions à l'égard des réactions à la drogue et de la nécessité d'entreprendre une étude pharmacologique complète des effets subséquents.

3. Des autorités éminentes de plusieurs pays ont reconnu la gravité du problème des réactions nocives consécutives à la drogue et recommandé instamment l'établissement sur le plan national de systèmes de surveillance.

La résolution présentée et adoptée par les délégués de l'ACC se lit comme

suit: "Que les délégués de l'ACC appuient par tous les moyens possibles le programme de surveillance de l'usage de la drogue à des fins thérapeutiques établies par le ministère de la Santé et du Bien-être social; que les délégués demandent à l'Association médicale canadienne, l'Association canadienne des pharmaciens d'hôpitaux, l'Association pharmaceutique canadienne, l'Association dentaire canadienne et l'Association canadienne des vétérinaires de collaborer avec le ministère de la Santé nationale et du Bien-être social en signalant toutes les réactions nocives qui surviennent, afin de faciliter la collation, l'analyse et la rétroaction immédiate de tous les renseignements

recueillis; qu'ils réclament de plus la diffusion des résultats auprès de tous ceux qui assument la responsabilité de prescrire des drogues à des fins thérapeutiques afin que les effets nocifs entraînés par ces drogues soient réduits au minimum."

Les dentistes de toutes les régions du Canada sont priés instamment de collaborer à la réalisation de ce programme majeur. Prière de faire parvenir tout commentaire ou renseignement concernant les réactions nocives entraînées par la drogue à Monsieur Clive Goodwin, président, Mise en oeuvre des résolutions, Association des consommateurs du Canada, 1000, rue Gloucester, Ottawa, Ont K2P 0A3.

Plus de 900 dentistes font du porte à porte

"Les premiers rapports de la campagne de la Fondation du million de dollars pour la dentisterie sont fort encourageants et laissent augurer un franc succès. En effet, de tous les coins du pays, les dentistes font parvenir des dons fort généreux à cette entreprise de charité" déclare le Dr J. E. Abra, dentiste de Winnipeg et président national de la Campagne de souscription de la Fondation (FCED).

"Dans l'est du Canada, les dentistes des provinces de l'Atlantique se mirent à l'oeuvre dès la fin de février sous l'habile direction de MM. M. J. Crompton, membre du Conseil d'administration de la FCED et président de la campagne du Nouveau-Brunswick; G. M. Jensen, président de la campagne en Nouvelle-Ecosse; J. R. Robertson, président de la campagne à l'Île du Prince-Édouard et W. J. Dwyer, président de la campagne à Terre-Neuve", ajoute le Dr Abra.

"Il semble que les dentistes de l'est du Canada s'inspirent du fuseau horaire de l'Atlantique. Ils sont toujours en avance d'une heure sur le reste du pays" poursuit le Dr Abra.

"De nombreuses contributions nous parviennent par l'intermédiaire des présidents provinciaux et si nous en croyons les premiers résultats, cette campagne sera couronnée de succès."

"Nous avons déjà reçu les contributions et les engagements de centaines de dentistes, pour des sommes allant de \$200 à \$500 et même davantage.

Nous avons déjà au moins huit contributions remarquables de \$1000 chacune", poursuit le docteur Abra.

"De plus, nous avons reçu des étudiants en chirurgie dentaire un don de \$200 et plusieurs autres moins élevés. Leur geste généreux s'inscrit comme un exemple frappant de l'intérêt qu'ils portent à la profession qu'ils ont choisie et un gage de la vitalité que connaîtra la chirurgie dentaire dans l'avenir."

"Ces témoignages sont de plus stimulants pour les 900 dentistes canadiens et plus qui consacrent librement leur temps et leurs efforts à solliciter leurs confrères au bénéfice de la Campagne de souscription de la Fondation, une entreprise de charité organisée et administrée par les dentistes du Canada" poursuit le docteur Abra, président national de la Campagne.

M. E. Bower, président du Conseil d'administration du Fonds canadien pour l'enseignement dentaire, souligne que "d'un bout à l'autre du Canada, il se manifeste une prise de conscience sans cesse accrue du rôle prioritaire de la dentisterie dans le domaine des sciences sociales."

La Fondation du million de dollars pour la dentisterie perpétuera hautement dans l'avenir l'appui accordé par la profession à l'avancement de l'enseignement dentaire et de la recherche.

Ces réalités réconfortantes ne peuvent que s'ajouter à nos avantages professionnels.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 28 février 1973:

Fonds avec garantie \$10.048;

Fonds à revenu fixe \$13.877;

Fonds d'actions ordinaires \$31.168.

L'avoir total (valeur marchande) du régime se montait à \$14,515,605.30.

Au cours du mois précédent, les transactions ont été les suivantes: achat 2,300 actions de Fields Stores; 900 actions de Zellers; et 3,326 CIF Conventional Mortgage Fund units.

Pour de plus amples renseignements, veuillez écrire à: CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Nouvelles internationales

La réunion de la FDI à Toronto en 1977

L'assemblée générale de la Fédération dentaire internationale a accepté l'invitation de l'Association dentaire canadienne de tenir le congrès mondial à Toronto en 1977.

L'invitation de l'ADC fut acceptée officiellement au cours de l'assemblée générale de la FDI qui a eu lieu à Mexico en octobre dernier.

Organisations dentaires

La Société des sciences de médecine légale fonde sa première section

A la réunion annuelle de 1972, tenue à Ottawa, la Société canadienne des sciences de médecine légale a reconnu la Société d'odontologie légale comme section de la SCSML. Il s'agit de la première section à se former au sein des Sciences de médecine légale qui compte 240 membres. Avec l'avènement de la Société d'odontologie légale, la SCSML comptera maintenant 326 membres.

A la réunion, certaines modifications ont été apportées à la constitution afin de prévoir la formation éventuelle

d'autres sections dans l'avenir. L'élargissement de l'activité de la SCSML aura sans doute pour effet de stimuler l'intérêt de tous ses membres. Certains détails demeurent à régler en ce qui concerne les catégories de membres qui en font partie et l'expérience exigée pour devenir membre à part entière.

Les docteurs K. B. Petersen de London, Ont et Gordon Swann de Calgary furent nommés membres du Bureau des gouverneurs. La section de l'odontologie nommera aussi un membre au Bureau. La nouvelle section d'odontologie de la SCSML se propose de poursuivre la présentation de cliniques de groupe à la réunion annuelle de l'ADC et de pousser l'élaboration des objectifs du Conseil de la FDI concernant l'odontologie légale dans l'intérêt des deux organismes.

L'Académie de périodontologie dispose de conférenciers

L'Académie canadienne de périodontologie dispose d'un certain nombre de cliniciens au pays qui sont disponibles en qualité de conférenciers sur une variété de sujets dans le domaine de la périodontologie et de la dentisterie préventive. Les groupements intéressés qui désirent de plus amples informations à ce sujet doivent s'adresser au docteur J.D. Stewart, 311, rue Rubidge, Peterborough, Ont.

L'économie

La CSN et les soins dentaires

Le Conseil central de la CSN tenait récemment une réunion afin de prendre connaissance en profondeur de la Loi 65, qui porte sur les services de santé et les services sociaux.

Au nombre des résolutions passées au cours de ces assises, l'une suggère à l'état de payer totalement les études des gens se destinant à la pratique de la médecine, à la condition, toutefois, que ces étudiants acceptent d'effectuer un stage de cinq ans dans des zones défavorisées après la fin de leurs études.

Une autre suggestion a été faite à l'effet de demander que les soins dentaires et le coût des médicaments soient défrayés entièrement par le régime d'assurance-maladie du Québec.

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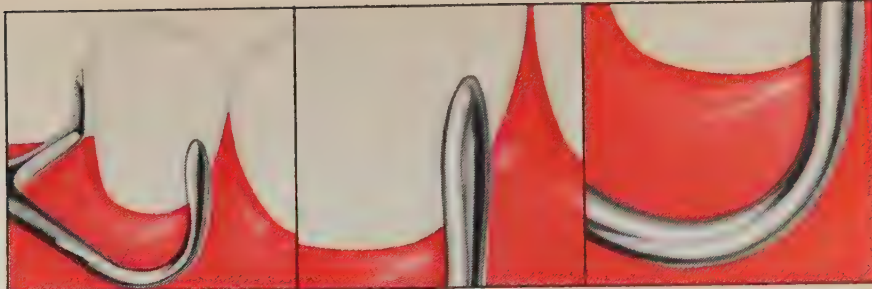
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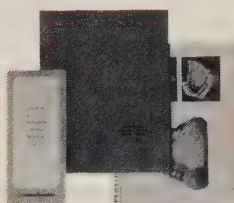
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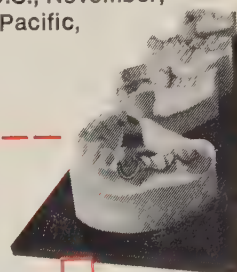
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Removable Partial Denture Design, Outline Syllabus, A. J. Krol, D.D.S., November, 1972, University of the Pacific, School of Dentistry.



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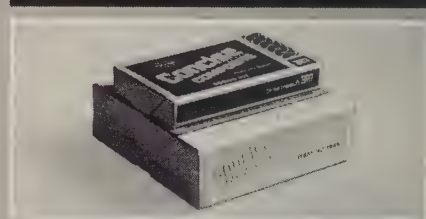


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VOTRE SÉCURITÉ

Cet article est le huitième d'une série traitant des programmes d'assurances et de placements disponibles aux membres de la profession dentaire.

Un nouveau programme d'assurances relatives aux affaires personnelles et professionnelles réservé spécifiquement aux membres de l'Association dentaire canadienne a suscité l'intérêt des dentistes de tous les coins du pays.

L'avènement prochain d'un nouveau programme comportant des garanties étendues fut annoncé en août dernier par le Service canadien de planification pour les dentistes, inc. et pour lequel des renseignements plus complets furent communiqués aux dentistes en décembre.

Ce programme d'assurances connu officiellement sous le nom de programme d'assurance relative aux affaires personnelles et professionnelles offre quatre groupes de garanties d'assurances. Ces quatre groupes, tels que définis par Monsieur W. Gene Jackson, administrateur du CDSPI sont les suivants: le contrat global concernant particulièrement le cabinet professionnel, l'assurance automobile, le contrat global relatif à l'assurance du propriétaire occupant ou l'assurance multiple de locataire ainsi que l'assurance relative aux embarcations de plaisance.

Garanties accordées par le contrat global couvrant le cabinet professionnel — Ce programme comporte une variété de six garanties d'assurance. La première couvre l'assurance de l'immeuble logeant votre cabinet professionnel. Cette assurance couvre tous les risques normaux: incendie, foudre, explosion, dommage occasionné par un avion ou un véhicule à moteur, émeute, fumée, ouragan et grêle.

Cette protection s'étend également au mobilier et aux fournitures de bureau. Une police flottante couvre tous les biens de votre bureau incluant aussi toutes les améliorations que vous avez effectuées en qualité de locataire. A ce sujet, l'assureur recommande que la garantie soit égale à la valeur totale des remplacements.

La troisième catégorie comprend les garanties contre les risques multiples des affaires professionnelles à l'exception de l'assurance contre les erreurs professionnelles. La protection ne garantit pas contre les blessures corporelles et les dégâts matériels, les responsabilités des locaux, les responsabilités générales contractuelles, les responsabilités fortuites

et les responsabilités légales en matière d'incendie imputable aux locataires, les responsabilités patronales et les paiements des frais médicaux volontaires.

La quatrième catégorie comprend la responsabilité de risques éventuels de la conduite d'un véhicule à moteur qui n'est pas votre propriété mais qui est utilisé en votre nom. A titre d'exemple, quand un employé utilise son véhicule personnel à votre service, les risques d'accidents sont aussi, dans ce cas, couverts par cette assurance.

Si vous êtes propriétaire de l'immeuble, vous voudrez peut-être vous prévaloir aussi de la protection contre les risques que comporte la chaudière.

En sixième lieu, les risques fondamentaux couverts par le plan global prévu spécialement pour le cabinet professionnel comportent les avantages suivants:

\$10,000 sur le contenu de votre bureau;

\$1,000 sur les documents de valeur et les registres;

\$2,000 de frais additionnels requis pour maintenir l'exercice de votre profession;

\$1,000 sur les devises, les titres, l'or et autres métaux précieux;

\$5,000 sur les effets à recevoir en vertu de garanties particulières quand les registres ont été perdus ou détruits;

\$1,500 sur la valeur locative.

Le CDSPI a réussi à obtenir un plan global comprenant une protection complète pour les membres. Les dentistes peuvent choisir un éventail étendu de garanties couvrant les risques de l'automobile. Vous pouvez obtenir, de même que tout conducteur d'automobile autorisé, une assurance couvrant des risques d'un million au maximum concernant les responsabilités légales relatives aux blessures corporelles ou à la mort infligée à toute personne ou pour tout dommage causé à la propriété d'autrui.

La protection garantie par la compensation sans égard à la faute est aussi disponible. Cette assurance protège le propriétaire d'un véhicule à moteur, son épouse et ses enfants vivant sous son toit, contre les frais médicaux de rééducation et ceux des frais funéraires, quelle que soit la personne responsable de l'accident. Vous pouvez être aussi assuré de la même manière contre les dommages directs subis par votre véhicule à moteur. Il vous est loisible de choisir soit la protection contre la collision ou une protection contre les risques multiples.

Plan global propriétaire/locataire — Cette forme d'assurance entièrement personnelle peut être adaptée à vos besoins particuliers. Vous pouvez vous procurer une assurance couvrant votre domicile de même que les habitations saisonnières telles que les maisons de campagne et les chalets de ski. Vous pouvez assurer des constructions extérieures telles que les garages et les remises. Vous pouvez aussi naturellement assurer le contenu de ces constructions en vertu du même programme. Si vous êtes locataire, ce plan vous apportera les mêmes avantages sauf ceux de la protection sur les constructions proprement dites.

Parmi les autres caractéristiques, citons les bénéfices "des frais additionnels d'existence" qui permettent d'assumer plus facilement les frais d'existence à l'extérieur de la maison qui doit être réparée à la suite de dommages matériels contre lesquels vous êtes assurés. Vous pouvez aussi choisir une assurance contre les réclamations à la suite de blessures corporelles infligées à autrui ou à sa propriété. Cette protection couvre les risques à domicile ou à l'extérieur du foyer. "L'assurance couvrant les frais médicaux" vous protège contre les risques de blessures accidentelles que peuvent subir des personnes alors qu'elles se trouvent sur votre propriété. "Le dommage volontaire à la propriété" vous protège contre les dommages accidentels ou la destruction de la propriété d'autrui.

En dernier lieu un avantage unique de ce plan global met à votre disposition une protection de mille dollars maximum contre toute somme passée à votre débit à la suite de la perte ou du vol de vos cartes de crédit. Vous avez aussi la possibilité de vous protéger contre les risques des faux chèques et des faux billets de banque.

Protection disponible pour les embarcations de plaisance — Si vous êtes propriétaire de bateaux, de motoneiges, de véhicules tous terrains, de "scooters" ou de toute autre embarcation de plaisance, vous pouvez protéger ces derniers contre les risques de dommage physique causé par des éléments externes sur lesquels vous n'avez aucun contrôle. Vous pouvez aussi vous protéger contre les blessures corporelles infligées aux autres ou contre les dommages à la propriété d'autrui occasionnés par les embarcations de plaisance dont vous êtes propriétaire. Le paiement des frais médicaux réclamés pour le traitement des blessures infligées aux passagers est aussi garanti par le même plan.

Contrairement à plusieurs autres plans, la demande de garanties comprise dans le programme d'assurance relative aux affaires personnelles et professionnelles peut être considérée en tout temps. Toutefois, comme pour tous les plans soumis par

le CDSPI, les membres de l'ADC sont libres d'y participer.

Les primes du nouveau programme, échues tous les trois mois, sont adressées au CDSPI. Une prime suffit à régler la ou les garanties choisies.

"A mesure que progressera notre expérience du programme, nous comptons pouvoir ajuster nos primes régulièrement afin de les maintenir aussi peu élevées que possible. Naturellement, déclare Monsieur Jackson, plus le nombre de dentistes adhérents sera élevé, plus il deviendra possible de fixer le taux à un niveau plus élevé."

Il est très simple de se prévaloir des avantages de ce plan. Les formulaires de demande sont disponibles aux bureaux du CDSPI, 230 rue St. George, Toronto, M5R 2P1, Ont. Monsieur Jackson souligne que la Maison Marsh and McLennan Ltée, un organisme pancanadien, administre le plan et que ses bureaux comptent de par tout le pays des conseillers en assurance compétents susceptibles de vous aider à remplir votre demande. Au Québec, la maison Pratte Morrisette, affiliée à la Compagnie Marsh and McLennan remplit les fonctions de conseillers.

Les dentistes bénéficient considérablement des services de CNA Assurance, en qualité d'assureurs. Cette firme nationale possède des bureaux dans tout le pays et ces avantages permettent d'accélérer le règlement des réclamations des dentistes adhérents.

Le programme couvrant les risques personnels et d'affaires a été conçu pour apporter une protection flexible répondant aux besoins individuels particuliers des dentistes.

Le choix d'un organisme national comme la firme Marsh and McLennan en qualité d'administrateur garantit à chaque dentiste toute l'attention individuelle requise pour établir son plan personnel d'assurance.

Cet article termine la série de huit consacrées à l'exposé des grandes lignes des types d'assurance, des modalités de placement et des besoins immobiliers de la moyenne des dentistes. Ces besoins sont reconnus par l'ADC et par l'entremise de son conseil sur les assurances et les placements ainsi que l'organisme administratif CDSPI choisi pour son caractère non lucratif qui offre aux dentistes un moyen commode d'accéder à la sécurité financière. Adressez vos demandes de renseignements concernant tous les aspects des placements, de la planification des biens immobiliers, de plans de retraite ou de plans globaux d'assurance au Service canadien de planification pour les dentistes. Le service met à votre disposition des imprimés touchant chaque plan offert.

Nous comptons que d'autres articles seront publiés dans le journal, quand l'espace le permettra, afin d'expliquer davantage l'action et la philosophie de votre conseil des assurances et des placements.

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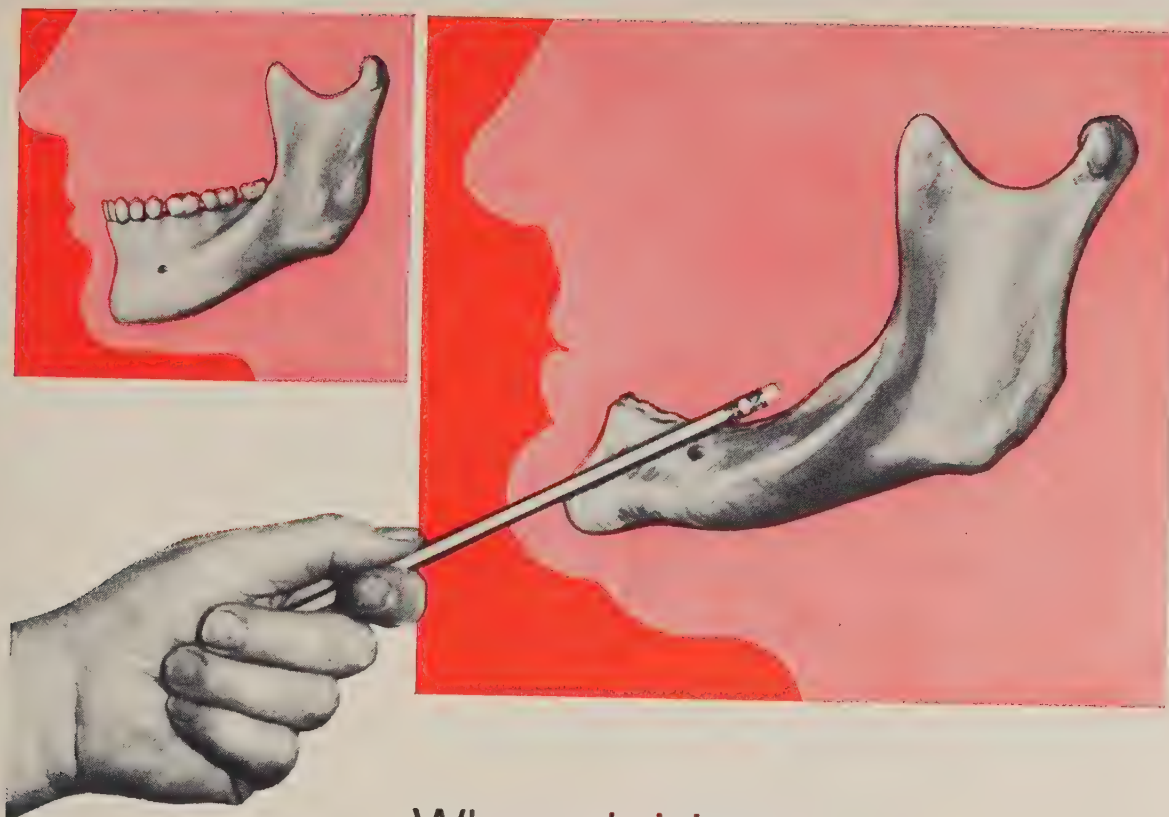
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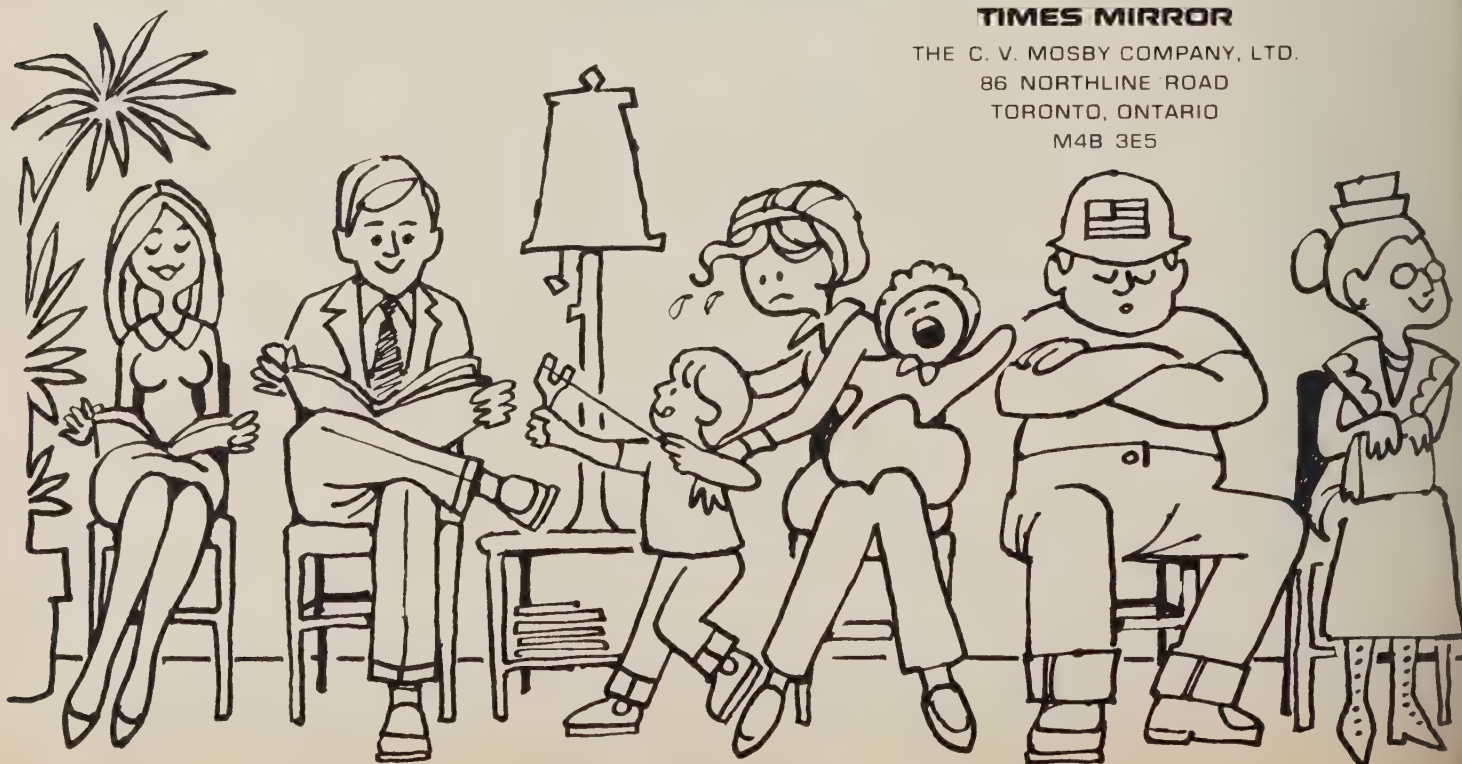
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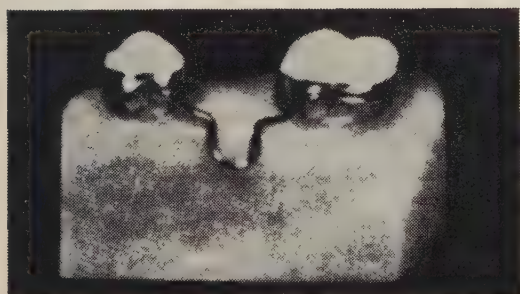
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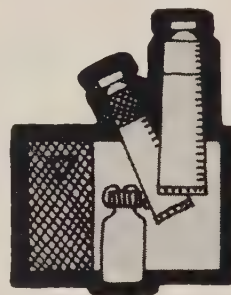
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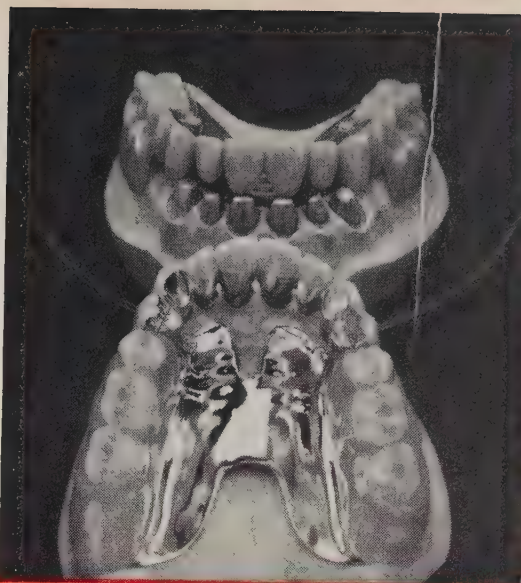
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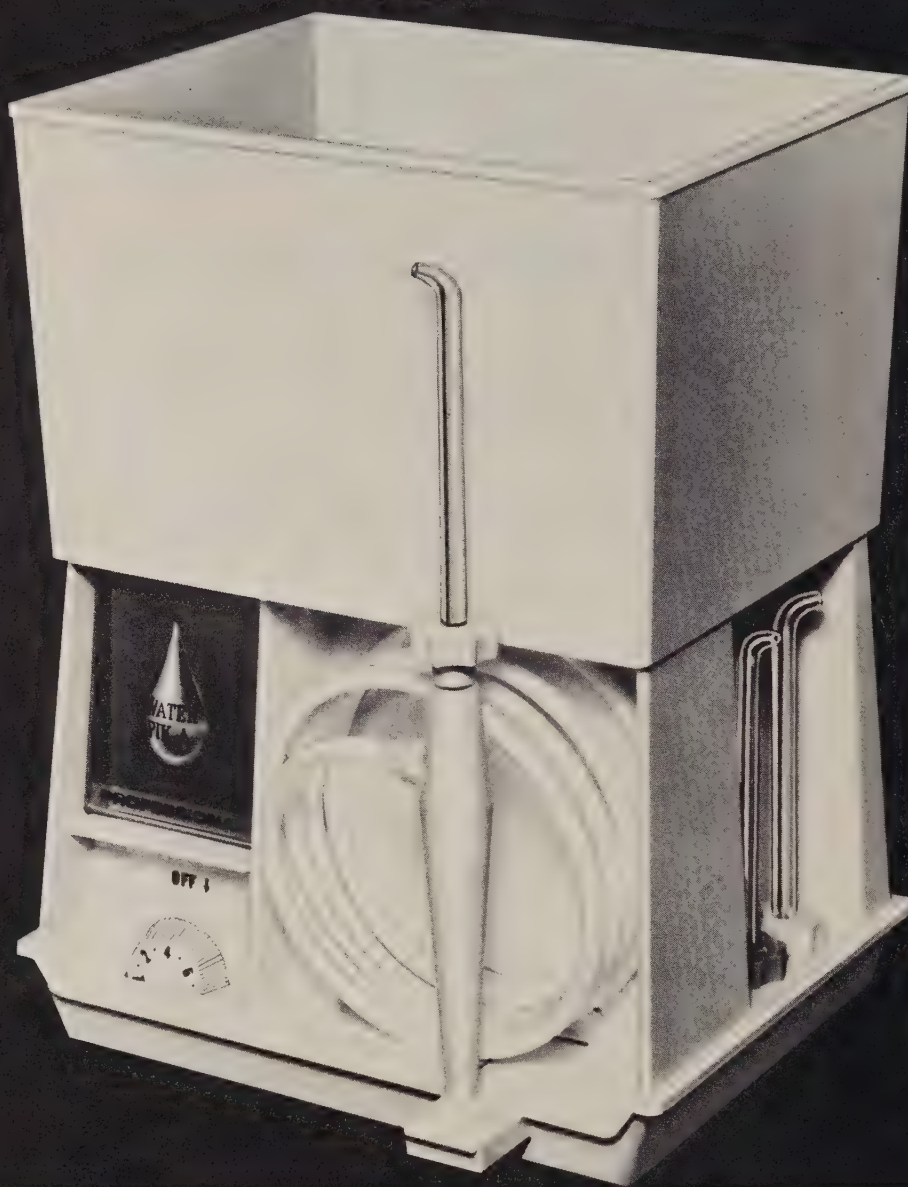
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Use of expanded function dental hygienists in the Prince Edward Island dental manpower study

When dental hygienists with limited duties in restorative dentistry were employed in six private offices and a public health children's clinic, they increased the productivity of dentists sufficiently to render their employment economically worthwhile in both settings. In the private offices and in the public health clinic the benefits far exceeded the costs in economic terms. The unit cost of treatment in the public health clinic was reduced by approximately one-third through the use of a new delivery system. Patient acceptance of the dental hygienist was excellent; complaints by patients were negligible. The hygienists consistently produced restorations of high quality and they attained an acceptable level of productivity in a very few months.

A la suite de l'affectation d'hygiénistes, dont les fonctions comportent certaines restrictions en dentisterie restauratrice, dans six cabinets dentaires privés et une clinique publique pour enfants, le rendement de ce personnel a augmenté la productivité des dentistes en proportions suffisantes pour justifier économiquement leur emploi dans les deux cas. Dans les cabinets dentaires privés et à la clinique de santé, les bénéfices dépassèrent de beaucoup les frais encourus. A la clinique de santé, les frais par unité de traitement furent réduits du tiers environ grâce à l'utilisation d'un nouveau système de distribution. Les patients acceptèrent parfaitement l'hygiéniste dentaire et les plaintes furent négligeables. Les hygiénistes fournirent constamment des traitements de restauration d'excellente qualité et parvinrent à atteindre après quelques mois un niveau de rendement acceptable.

R. G. Romcke, DDS, DDPH
Charlottetown

D. W. Lewis, DDS, DDPH, MScD
Toronto

This report describes the results of a two and one-half year study to determine whether specially trained dental hygienists who insert and finish restorations in cavities prepared by a dentist can increase his productivity to an extent that is economically feasible in private practice. The study was carried out in six private dental offices and in a public health clinic for children in three rural areas of Prince Edward Island.

Review of literature

Better education and increasing affluence are likely to escalate the demand for dental care in the near future. Prepaid dental insurance together with government sponsored children's dental care programs will accelerate this trend by removing the economic barriers for many thousands of people. Existing and projected dental schools may not be able to produce enough dentists to cope with the consequent demands for service. More effective use of auxiliary personnel is therefore one approach to increasing the availability of dental care to the public.

Dental auxiliaries with expanded functions have long been advocated as a logical means of extending the dentist's skills to more people. The medical

Item	1968 PEI fee schedule	Time units	RVU value
Examination	\$ 6	1.5	1.25
Prophylaxis	\$ 5	5.0	1.5
Topical fluoride	\$ 5	8.0	1.0
First extraction per quadrant	\$ 7	1.5	1.5
Additional extractions per quadrant	\$ 4	1.5	0.7
Amalgam restorations			
1 surface deciduous	\$ 5	Time units per surface prepared 3.5	1.0
2 surfaces deciduous	\$ 8		1.6
3 surfaces deciduous	\$12		2.5
1 surface permanent	\$ 5	Time units per surface restored 4.5	1.0
2 surfaces permanent	\$ 9		1.8
3 surfaces permanent	\$15		3.1
Silicate restorations			
1 surface	\$ 7	Total time units per surface 8.0	1.5
2 surfaces	\$12		2.5
Polish restorations	0	0.5	0

profession has made considerable progress in following this approach.

In New Zealand, dental nurses have provided essentially complete dental care for preschool and school children up to age 13 for nearly 50 years. Supervision by dentists is minimal. With the exception of Gruebbell,¹ all foreign observers have rated the quality of the treatment produced by New Zealand dental nurses as satisfactory.^{2,3} A similar auxiliary, but supervised by the dentist, has also been introduced in England.⁴

In the United States, emphasis has been placed on additional duties for dental assistants. These include application of rubber dam and matrix retainers, as well as the insertion and finishing of amalgam, silicate cement and composite resin restorations. In 1964 Ludwick, Schnoebelen and Knoedler⁵ reported a study involving US Navy dental technicians who received a five week course in extended duties in addition to their regular 16 week training program. The new duties included placement of rubber dam, cavity liners and bases, matrices and silicate restorative materials. Also taught was the placement, carving and polishing of silver amalgam restorations. Teams consisting of one dental officer and three technicians produced exactly 100 per cent more than dental officers with two chairs and two technicians using conventional methods. The quality of the restorations produced

was judged as good as those placed by dental officers.

Another study by the US Public Health Service, Division of Indian Health, involved several teams each comprising a dental officer and two dental assistants.⁶ The dental officer provided seven weeks of training in matrix application and the insertion, carving and finishing of amalgam to the two assistants assigned to him. The quality and quantity of restorations were then evaluated by means of 40 day "before and after" periods. Independent examiners could not distinguish the restorations placed by dentists from those placed by dental assistants.

Hammons and Jamison^{7,8} used specially trained auxiliaries at the University of Alabama for limited restorative duties. Selected female high school graduates were given a two year training course. Functions delegated were impressions for study casts, placing rubber dam, temporary restorations and matrix bands, condensing and carving amalgam restorations and applying the final finish and polish to restorations. These auxiliaries performed the delegated duties as well as advanced undergraduate dental students.⁷ The quality of their work after one year of clinical experience was equal to that of practising dentists.⁸

A recent five year investigation at the USPHS Dental Manpower Development Centre in Louis-

Personnel and equipment utilized
in various study phases

Table 2

Phase	Dental chairs	Assistants and receptionists	Extra-trained hygienists	Type of care
I	Practice			
II	2	1		Initial
III	2	2		Initial
IV	3	2	1	Initial
V	4	3	2	85% recall
VI	4	3	2	Initial
VII	4	3	2	Initial

Percentage increase in productivity
based on time units

Table 4

Phase	Time units	% increase over phase II	% increase over phase III	% increase over phase IV
II	189			
III	233	23		
IV	404	114	73	
V	545	188	134	35
VI	498	163	114	23
VII	479	154	106	19

Daily productivity achieved in various phases

Table 3

Phase	RVU	PEI fees	Time units
II	33.2	\$161	189
III	42.2	\$211	232
IV	75.4	\$377	404
V	85.4	\$427	545
VI	79.4	\$397	498
VII	87.6	\$438	479

ville, Kentucky,^{9,10} has provided much detailed information on expanded functions for dental auxiliaries. The procedures delegated were similar to those previously mentioned and formerly occupied approximately 40 per cent of the dentist's chair-side time.

The quality of work performed by expanded function assistants was comparable to that of dentists. Time requirements were very slightly higher for the assistants. Teams consisting of one dentist and four expanded function assistants achieved productivity increases of 133 per cent, while teams consisting of one dentist and three expanded function assistants achieved productivity increases of 80 per cent.

Rosenblum^{11,12} described studies carried out with paedodontic auxiliaries. Dental assistants were given a minimum of three months' additional training and were used with teams consisting of one senior dental student and one trained assistant. Productivity increases of 33–51 per cent were obtained. Quality and speed were comparable to that of senior dental students.

In Canada, several studies have been carried out by the Canadian Forces Dental Service.^{13–15} The auxiliary selected for training in extended duties was the "clinical technician," the military counter-

part of the dental hygienist. The clinical technician attains this position through a series of courses interspersed with periods of duty as a dental assistant. The total amount of formal training is 35 weeks, but the total training period covers several years.

Clinical technicians were given a 14 week course (later changed to 16 weeks) in the placement of rubber dam and matrix retainers; insertion and finishing of silver amalgam, silicate cement and acrylic filling materials; preliminary impressions; periodontal packs; and removal of sutures. On completion of this training program the clinical technicians became "dental therapists."

Using three chairs, two assistants and one dental therapist, productivity increased 99.1¹⁴ and 81.6 per cent¹⁵ over that registered by one dentist with one assistant and two chairs. Productivity with three chairs, two assistants and one therapist was 46.7 and 45.1 per cent higher than that obtained with three chairs and two assistants only. The quality of the restorations placed by the therapists was excellent.

The University of Manitoba and the University of Toronto dental faculties have also conducted limited studies on the training of dental hygiene students in extended duties. A large majority were judged capable of performing additional duties.¹⁶

PEI dental manpower study

The present study was patterned on the Canadian Armed Forces studies. The dental hygienist was selected as the auxiliary to perform an expanded range of duties. Her specific tasks included:

1. Preliminary examination of the patient.
2. Patient education.
3. Scaling and polishing of teeth
4. Application of topical fluoride solution to the teeth.

Phase	Hygienist	Productivity of hygienist				Productivity of dentist				
		Surfaces restored	Prophylaxes, fluoride	Radio-graphs	Restorations polished	Examinations	Surfaces prepared	Surfaces restored	Teeth extracted	Prophylaxes fluoride
II						2.5	17.2	17.2	5.5	2.5
III						3.7	20.7	20.7	10.5	3.5
IV	1	30.4	4.7		7.9	5.6	36.5	6.2	20.4	0.4
V	1	36.9	1.8	0.14	5.3	10.2	46.1	5.4	6.6	0.23
	4	4.0	7.7	4.5	8.8					
VI	1	24.3	2.7	4.7	5.6	5.5	46.2	2.7	11.3	
	4	20.0	2.8	3.7	2.4					
VII	1	22.4	2.6	4.4	1.9	5.8	43.9	1.4	21.8	
	4	20.0	2.8	3.7	2.4					

5. Exposure of radiographs.

6. Application of rubber dam.

7. Placement of matrix retainers.

8. Insertion, finishing and polishing of silver amalgam, silicate cement and composite resin restorations.

Special training in restorative procedures was provided at the Faculty of Dentistry, Dalhousie University, Halifax.

During the summer of 1969 a two and one-half month program was provided for three dental hygienists. During the summer of 1970 three additional hygienists were trained in a two month program.

The study was divided into two parts. The public health portion extended over a period of two and one-half years. Beginning with a basic team of one dentist and one assistant using two fully equipped operatories, dental teams of increasing size were evaluated. The largest team consisted of one dentist, two expanded function dental hygienists,

three dental assistants and a receptionist in a four chair clinic. The productivity and relative costs of various dental teams were evaluated. Detailed work sampling analysis and stopwatch time studies¹⁷ were also carried out.

The other part of the study involved specially trained dental hygienists who worked in six private dental offices for periods of three months. In three of the offices the hygienists worked for additional periods of one year or more. Detailed records of productivity were kept before and during the time the hygienists were present.

Throughout the study the dentist was responsible for the quality of all treatment provided by the hygienist. All treatment had to be evaluated and approved by the dentist before it was considered complete.

Public health children's clinic

The public health children's clinic was located at different times in three rural centres in Kings County. The clinic, which varied from two to four operatories, was set up in a classroom in each of three consolidated elementary schools. Modern functional dental equipment was used and sit-down four-handed dentistry was practised. A relatively short five and one-half hour day was worked because the staff had to travel a considerable distance to the clinic.

All children six to 10 years of age were eligible to participate. The participation rate was approximately 85 per cent. Very few children had previously received any significant amount of dental

Individual and team daily productivity
in terms of time units

Table 6

Phase	Total time units	Dentist's time units	Hygienist 1 time units	Hygienist 4 time units
II	189	189		
III	233	233		
IV	404	202	202	
V	545	215	201	130
VI	498	207	157	134
VII	479	203	141	135

Percentage of dentist's time spent in selected activities

Table 7

Phase	Prophylaxis, fluoride	Cavity preparation	Base and matrix, insert, carve and polish restorations	Non-productive time
II	15.4	11.4	31.3	22.0
III	16.3	11.3	25.0	27.1
IV	2.0	20.2	9.9	36.3
V	1.3	23.2	7.1	40.6
VI	0.1	22.4	5.0	40.5
VII	0	21.1	3.4	46.2

treatment. Accordingly, the average treatment requirements per child were high.

Each child received an examination; bitewing radiographs as indicated; prophylaxis, topical fluoride application and dental health education; and all necessary restorations and extractions.

Rubber dam was used in nearly every case and most restorations were polished. As a general rule, treatment at each appointment was confined to a single quadrant.

Evaluation — The forms used to record productivity also permitted the contribution of each operator to be identified.

Several criteria were used to measure productivity. All were based on a working day adjusted to 330 minutes. The criteria included the relative value unit (RVU) system, the "time unit" system and the 1968 PEI fee schedule.

The RVU system is the basis of the PEI and most other provincial fee schedules. Basically, each examination, prophylaxis, topical fluoride application, restored surface and extraction is worth approximately one relative value unit (RVU). The original Canadian Dental Association values are used.¹⁸ When various procedures were timed by stopwatch it was found that, under the circumstances existing in this particular dental clinic, examinations and extractions were highly overvalued in the RVU system.

The time unit system was devised to compensate for this situation. Essentially, each time unit represents work requiring one productive minute of the study dentist's time. Repeated timings with a stopwatch during the initial four month practice session established the time unit values for various procedures. The time unit system is probably the most accurate indicator of productivity, and permits a breakdown of total productivity into individual team members' productivity. This is of

great value in determining the relative contribution of team members.

The 1968 PEI fee schedule¹⁹ (replaced in July 1971) was based on \$5 per RVU. The fees, time units and RVU values for the specific procedures performed in the public health clinic are shown in Table 1. Fees and RVU values for the additional procedures carried out in the private practice part of the study are found in the 1968 fee schedule.

Work sampling records the precise activity of each operator at 10 randomly selected times per hour.¹⁷ In a normal 60 day phase a total of 3,300 recordings were made. This number is sufficient to provide reliable estimates regarding the percentage of the operator's day spent in performing various procedures. In other words, it shows the distribution of how the dentist and dental hygienist spent their time in achieving the productivity indicated. Work sampling may also be used to measure indirectly the mean time required to perform certain procedures by calculating the total time spent on a specific procedure and then dividing this by the total number of times the procedure was performed.

In addition, work sampling may be used to determine the percentage of the dentist's time which can be delegated to the dental hygienist in a given working environment. It may also be used to show to what extent "delegatable duties" are actually being delegated. Work sampling is extremely valuable in studies where auxiliaries of various kinds are used.

The time study was carried out during the initial practice session with a decimal stopwatch. Additional recordings were made throughout the study to monitor changes in speed of the dentist and hygienist.

Method — The study was divided into phases each of which evaluated the productivity of a particular

Percentage of hygienist 1's time spent in various activities

Table 8

Phase	Prophylaxis, fluoride	Restorative procedures	Non-productive time
IV	18.7	53.9	24.7
V	13.7	55.1	28.3
VI	16.9	45.9	28.2
VII	17.3	38.3	37.9

Percentage of hygienist 4's time spent in various activities

Table 9

Phase	Prophylaxis, fluoride	Restorative procedures	Non-productive time
V	43.0	12.5	34.1
VI	12.0	60.8	21.5
VII	13.1	54.0	26.7

Personal productivity and productive time of dentist in phases III and IV

Table 10

Phase	Total time units	Dentist's time units	% of dentist's time productive
III	233	233	72.9
IV	404	202	63.9
Difference (IV-III)	171	31	9.3
% difference	+ 73.4	- 13.3	- 12.8

dental team. All phases consisted of 60 working days except phase V, which occupied only 34 days due to constraints of time and patient supply.

Table 2 shows staff and equipment arrangements used in the various phases. Phase I was a practice phase for which no data are presented. Phases II and III are typical work situations in the majority of private dental offices. Phase IV is the phase where the extra-trained hygienist was introduced. Comparisons of the productivity of phase IV with that obtained in phases II and III are the key comparisons. Phases V, VI and VII involved two dental hygienists.

With the exception of phase V all the phases were based on children who were receiving comprehensive treatment for the first time. In phase V

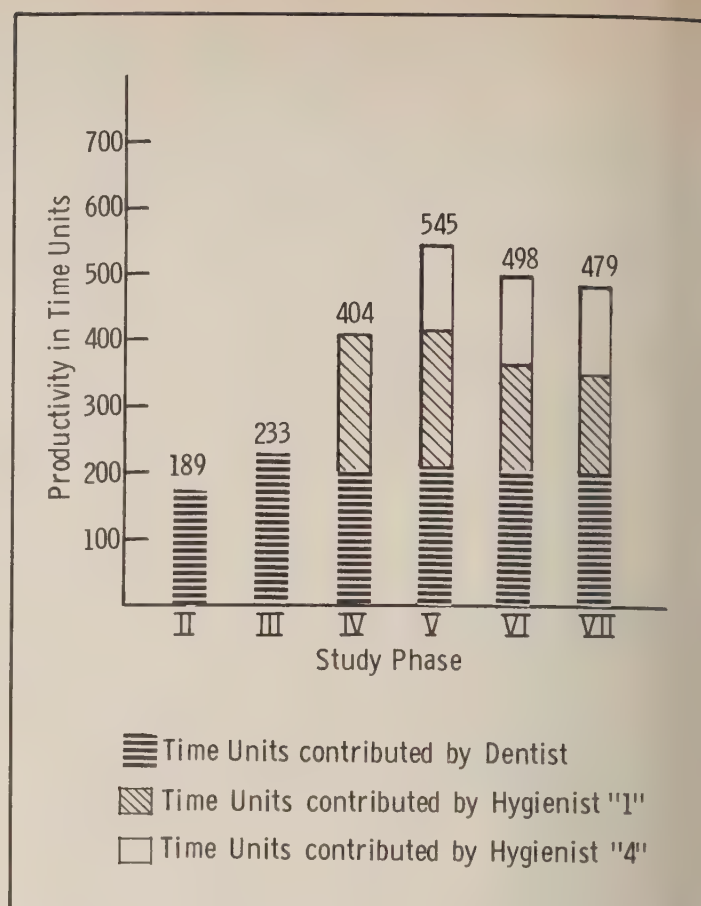


Fig 1 Individual and team productivity in various study phases (public health clinic).

an artificial mix of patients was created. This consisted of 85 per cent of patients who had been treated 12 months previously and 15 per cent who were being treated for the first time. The object was to more closely duplicate conditions in a mature private practice or in a mature children's dental care program.

Findings

Productivity — Table 3 shows the productivity obtained in the various phases of the study, while Table 4 illustrates percentage increases in productivity in terms of time units.

The addition of a second assistant in phase III resulted in a productivity increase of 23 per cent as measured by time units. The addition of the extra-trained hygienist and one extra operator in phase IV resulted in a further increase of 73 per cent. The new team as utilized in phase IV produced 114 per cent more dental treatment than the basic team in phase II. In phases V, VI and VII a second hygienist, a third assistant and a

Cost items	Phase					
	II	III	IV	V	VI	VII
Dentist's salary	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000
Assistants' salaries	3,300	6,600	6,600	9,900	9,900	9,900
Hygienists' salaries			6,600	13,200	13,200	13,200
Equipment amortized at 15%	2,250	2,250	3,000	3,750	3,750	3,750
Supplies	2,250	3,000	5,000	5,000	5,000	5,000
Rent	1,500	1,500	2,000	2,500	2,500	2,500
Utilities	500	500	500	600	600	600
Miscellaneous	700	800	1,000	1,200	1,200	1,200
Total cost per year	\$31,500	\$35,650	\$45,700	\$57,150	\$57,150	\$57,150
Cost/day (235 days/year)	\$135	\$151	\$190	\$243	\$243	\$243
Benefits/day						
968 PEI fee schedule	\$161	\$211	\$377	\$427	\$397	\$438
"Profit" per day	\$ 26	\$ 60	\$187	\$184	\$154	\$195
RVU per day	33.2	42.2	75.4	85.4	79.4	87.6
Cost per unit of treatment (RVU)	\$4.07	\$3.58	\$2.52	\$2.85	\$3.06	\$2.77
% reduction in costs per unit of treatment (RVU)						
Phase II base		12.04	38.08	29.98	24.32	31.70
Phase III base			29.61	20.39	13.97	22.63

Phase II — two chairs, one assistant

Phase III — two chairs, two assistants

Phase IV — three chairs, two assistants, one hygienist

Phase V — four chairs, three assistants, two hygienists

Phase VI — four chairs, three assistants, two hygienists

Phase VII — four chairs, three assistants, two hygienists

fourth operatory were added with resultant percentage increases in productivity over phase II of 88, 163 and 154 per cent respectively. Compared with phase III the productivity increases were 134, 14 and 106 per cent.

Table 5 shows in detail the personal contributions of the dentist and dental hygienists to the total productivity shown in Table 3.

It is interesting to note the contribution of the dental hygienist in phase IV. She restored 30.4 surfaces, performed 4.7 prophylaxes and topical fluoride applications and polished 7.9 restorations. Noteworthy, too, are the changes which occurred in the dentist's activities between phases III and IV.

Table 6 and Figure 1 illustrate the contribution of the dentist and dental hygienist to total productivity as expressed in time units.

With reference to the dentist's personal time units, the increase from phase II to phase III is attributed to the presence of a full-time chairside assistant. In phases IV, V, VI and VII his productivity is relatively constant but lower than in phase III due to the additional time required to move from patient to patient and to supervise the hygienist. This decrease of approximately 13 per cent represents the "inefficiency factor" of the new delivery system.

Dental hygienist 1 produced 202 and 201 time units in phases IV and V. In phases VI and VII her productivity dropped one-quarter due to lack of sufficient work. Dental hygienist 4 was somewhat less productive than dental hygienist 1.

It should be noted that the dentist and dental hygienist were equally productive in phase IV.

Quality of "new" restorations placed by dental hygienists

Table 12

Operator	Total restorations	Total satisfactory	% satisfactory	Total points	Mean points
Hygienist 1	26	26	100.0	555	21.3
Hygienist 2	23	14	60.9	409	17.8
Hygienist 3	32	29	90.6	617	19.3
Hygienist 4	26	26	100.0	512	19.7
Hygienist 5	8	6	75.0	140	17.5
Total	115	101	87.8	2,233	19.6

Quality of "old" restorations placed by dentists

Table 13

Operator	Total restorations	Total satisfactory	% satisfactory	Total points	Mean points
Dentist 1	12	10	83.3	224	18.7
Dentist 2	73	57	78.1	1,223	16.8
Dentist 5	2	1	50.0	21	10.5
Dentist 7	11	11	100.0	204	18.5
Total	98	79	80.6	1,672	17.1

Work distribution patterns — Tables 7, 8 and 9 summarize some of the more interesting observations from work sampling of the dentist and dental hygienists. Table 7 reflects the change in the pattern of the dentist's activities when the hygienist was added in phase IV. Generally speaking, he devoted much more time to cavity preparation while spending much less time on prophylaxis, topical fluoride applications and the insertion and carving of restorations.

There were also increases in non-productive time after phase III. These reflect the "inefficiency" of the delivery system and represent the additional time spent in moving from patient to patient, washing hands and supervising the hygienist. The productive time was correspondingly reduced from approximately 73 per cent of the day in phase III to 64 per cent of the day in phase IV. This approximately 13 per cent decrease in productive time parallels the 13 per cent decrease in personal productivity of the dentist, which was previously referred to.

Tables 8 and 9 summarize how the dental hygienists spent their time in the various study phases. They devoted something like one-quarter

of their productive time to prophylaxis and topical fluoride applications while spending the remainder on restorative procedures. In phase V relatively more time was spent on prophylaxis and fluoride applications because in this phase 85 per cent of children were recall patients. Since average treatment needs were less, a higher percentage of total time was required for prophylaxis and topical fluoride application.

Table 10 combines selected data from Tables 6 and 7. "Productive time" refers to the time spent in carrying out dental procedures. Non-productive time includes such things as hand washing, moving from chair to chair, supervising the dental hygienist, and idle time. A certain amount of non-productive time is essential and desirable.

The decrease in the dentist's productive time in phase IV when compared to phase III was matched by an almost equal decrease in the dentist's personal productivity as measured in time units. This indicates that his speed remained constant during phases III and IV and that the 13.3 per cent decrease in personal productivity observed in phase IV resulted from the "inefficiency" of the delivery system. Noteworthy, too, is that the 13.3 per cent

Operator	Total restorations	Total satisfactory	% satisfactory	Total points	Mean points
Hygienist 1	144	133	92.4	2,521	17.5
Hygienist 2	22	19	86.4	320	14.6
Hygienist 3	8	6	75.0	150	18.8
Hygienist 4	37	36	97.3	707	19.2
Hygienist 5	5	5	100.0	101	20.2
Total	216	199	92.1	3,799	17.6

decline in the dentist's personal productivity was accompanied by a 73.4 per cent increase in team productivity.

Time studies — The stopwatch time studies indicate that the dentist's speed increased significantly between phases II and III only. This is attributed to the addition of a full-time chairside assistant in phase II and the subsequent phases.

Costs and benefits — Operating costs of the public health clinic consist of salaries, equipment amortized at 15 per cent of value per year, supplies, rent, utilities and miscellaneous items. The value of the benefits is expressed in terms of the 1968 PEI fee schedule.¹⁹

Table 11 illustrates the daily costs and benefits for the various study phases. "Profit per day" is the difference in dollars between benefits and costs. The cost per unit of treatment (RVU) is a significant consideration (Fig 2). There were marked declines in phases III and IV followed by a slight rise in phases V, VI and VII. This rise was mainly due

to the minor difficulties that were encountered in keeping two hygienists busy at all times.

Table 11 shows a 12.0 per cent reduction in costs per unit of treatment as a result of adding a second dental assistant. The addition of the extra-trained dental hygienist in phase IV brought about a further reduction of 29.6 per cent. The combined reduction in costs obtained by adding a second dental assistant and an extra-trained hygienist was 38.1 per cent.

The costs per unit of treatment for teams with two dental hygienists (phases V, VI and VII) show reductions of 24.3 to 31.7 per cent when com-

Comparison of quality of "old" restorations placed by dentists and dental hygienists Table 15

Placed by	No. of restorations	% satisfactory	Mean points	S. E.
Hygienists	216	92.1	17.6	(0.003)
Dentists	98	80.6	17.1	(0.39)

Difference between 92.1% and 80.6% is highly significant ($P < 0.01$)
 Difference between 17.6 and 17.1 is not significant ($P > 0.05$)

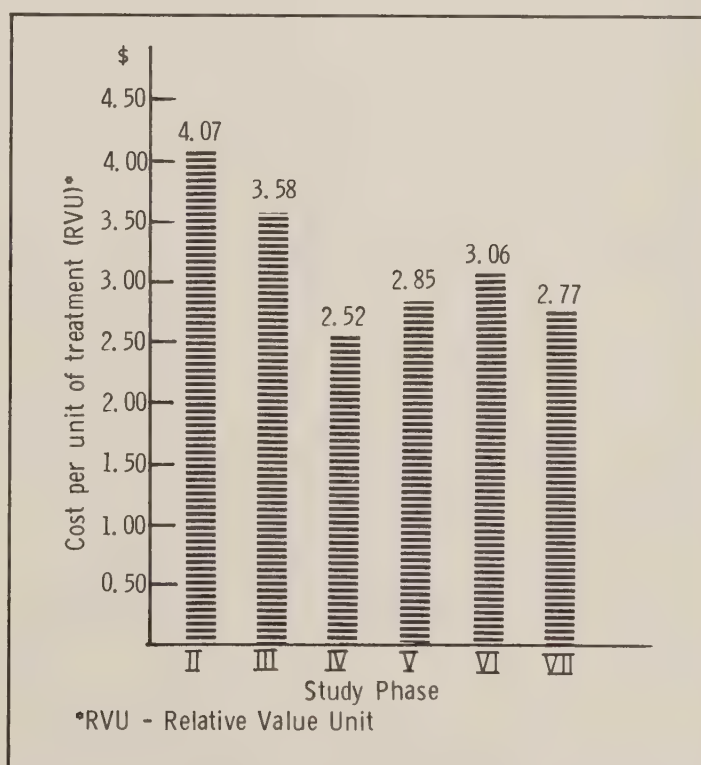


Fig 2 Cost per unit of treatment in various study phases (public health clinic).

Dentist	Hygienist	RVU			% increase	Hours per day	Assistants*		Operatory equipment
		Before	After	Increase			Before	After	
1	1	34	59	25	73.5	6.4	1	2	One fully equipped Two partly equipped
3	4	46	60	14	30.4	?	1	1	One fully equipped Two partly equipped
4	1	42	57	15	35.7	6.3	1	1	One fully equipped Two partly equipped
5	4	63	82	19	30.2	8.2	2	3	Three fully equipped
6	4	59	78	19	32.3	6.7	1	1	One fully equipped Two partly equipped
7	4	50	68	18	36.0	7.2	1	1	Two fully equipped One partly equipped

Average productivity before = 49.0 RVU

Average productivity after = 67.3 RVU

Average productivity increase = 18.3 RVU

Average per cent increase = 37.4%

In most cases the above increases were obtained under far from ideal conditions

*Assistants include chairside assistants and receptionist

pared with the dentist operating with one assistant. The cost reduction was 14.0 to 22.6 per cent when compared with a dentist using two dental assistants.

Phase IV, involving two dental assistants and one extra-trained dental hygienist, gave the best cost-benefit ratio. Two-hygienist teams permitted the dentist to care for a significantly larger number of patients although the costs per unit of treatment were slightly higher. As previously stated, this slight increase in cost resulted from the minor difficulties in keeping two hygienists busy at all times.

It should be noted that these results were obtained in a situation where the dentist and hygienist were equally productive. The interested observer, when applying the costs and benefits to his particular geographic area, should also make allowance for possible productivity differences between a dentist and dental hygienist. These manifest when an inexperienced hygienist begins to work with a dentist who has had several years' experience.

Quality — A detailed evaluation of the quality of the restorations placed by expanded function den-

tal hygienists was carried out by three recognized experts in restorative dentistry (E. R. Ambrose, dean and chairman of restorative dentistry at McGill University, Montreal; A. B. Hord, assistant dean and associate professor of restorative dentistry, University of Toronto; and R. E. Jordan, chairman of restorative dentistry, University of Western Ontario, London). The results from the public health clinic and private offices were combined for convenience. Evaluation methods and criteria were adapted from those proposed for use in the Forsyth experimental program.²⁰

The three evaluators spent a combined total of eight days in the public health clinic and in three private dental offices. They made three types of evaluation. The first involved restorations placed in the presence of the evaluator. These are referred to as "new restorations." The second involved an assessment of previously placed restorations in the mouths of patients having "new restorations" placed. In the public health clinic an additional group of randomly selected patients was also evaluated. Restorations in both of these groups are referred to as "old restorations." The evaluation of "old restorations" was of the "blind" type in that the evaluator did not know whether the

Productivity increases in two private dental offices

Table 17

Dentist	RVU increase	%	Hours per day	Assistants*		Time period in months
				Before	After	
Y	32	50.8	7.7	2	3	12
Z	15	44.1	6.8	1	2	12
Z	19	55.9	6.7	1	3	4

* Assistants include chairside assistants and receptionist

restorations had been placed by a dentist or a dental hygienist. The third method of evaluation was completely subjective. In it each evaluator compared his observations in the clinic and private offices with his impressions of the quality of work performed by dentists in the province where he resided.

Most of the "old restorations" had been placed within the past 12 months. At the time of placement the dentists and dental hygienists had no idea that their restorations would be evaluated. Therefore they reflect the quality provided in normal dental practice.

Each restoration was given one to four points for each of a number of criteria such as anatomy, contour and margins. In addition, the restoration was rated as "clinically satisfactory" or "not satisfactory." A restoration was considered "clinically satisfactory" if it was completely satisfactory or had minor correctable imperfections. The method of analysis selected was to combine the ratings of the three evaluators.

Table 12 shows the results obtained from the evaluation of "new" restorations placed by five dental hygienists. The overall result is that 87.8 per cent of "new" restorations were considered satisfactory, with an average score of 19.6.

The results of "old" restorations by dentists are shown in Table 13 and for "old" restorations by dental hygienists in Table 14. Of the restorations by dentists, 80.6 per cent were satisfactory, with an average score of 17.1. Restorations placed by hygienists were satisfactory in 92.1 per cent of cases with an average score of 17.6.

Table 15 summarizes the evaluation of restorations placed by dentists and dental hygienists and includes some statistical comparisons. The mean quality scores favour the dental hygienists (17.6 vs. 17.1). However, the difference is not statistically significant ($P > 0.05$). The percentage of "old" restorations judged satisfactory also favoured the dental hygienists (92.1 vs. 80.6 per cent). Here the difference is highly significant ($P < 0.01$).

Two evaluators reported that "on the whole these services would be considered better than the average performance of the general practitioner in the provinces of Ontario and Quebec." The third evaluator stated that "the general results would have to be classified as somewhat better than that normally attained by the average general practitioner."

The overall results thus indicate that the restorations placed by five dental hygienists were equal to, if not better than, restorations placed by the four experienced dentists, under whose supervision the hygienists worked.

Comments — Data from the public health portion of this study support the concept of expanded functions for dental hygienists. In the public health children's clinic environment dental hygienists were readily integrated into a variety of teams. All of these teams functioned effectively and allowed the dentist to treat much larger numbers of patients at considerably reduced costs per unit of treatment.

The quality of the restorations placed by dental hygienists was equal to or better than that of those placed by dentists. The productivity of one dental hygienist equalled that of the dentist while the second hygienist was somewhat less productive.

The critical comparison of the public health part of the study is between phases III and IV. Here the addition of an equally productive dental hygienist raised productivity by 73 per cent while the dentist's operating speed remained constant. This is considered to be a reasonably accurate evaluation of the delivery system.

The fact that in phases III and IV we are measuring the productivity of only one dentist and one hygienist would ordinarily produce results that are of little significance. The productivity increase obtained could be influenced by differing operating speeds of dentist and dental hygienist. Also, the dentist could have worked faster and hence produced more in phase IV than in phase III. How-

Costs of adding an extra trained dental hygienist Table 18
to a private office

Item	Annual cost	Cost per working day (235/year)
Hygienist's salary and fringe benefits	\$7,000—\$8,500	\$30—\$36
Assistant's salary and fringe benefits	\$3,600—\$4,500	\$15—\$19
Equipment plus renovations at 15% of value	\$ 600—\$2,000	\$3—\$8
Dental office supplies		
Where productivity increase is 15—20 RVU	\$1,000	\$4
Where productivity increase is 20—35 RVU	\$1,500	\$6
Rent for 150 sq ft	\$0—\$600	\$0—\$3
Other items		
Utilities		
Office equipment	\$1,000	\$4
Insurance		
Miscellaneous		

In PEI and most fee schedules laboratory fees are added to the basic fee as determined by RVU value. Laboratory fees are therefore passed on to the patient and are not considered as an increased cost of the practice

ever, the rather complex recording methods used permitted us to measure and compensate for these factors where necessary.

Private dental offices

The second part of the PEI dental manpower study was carried out in six private dental offices under normal or near normal conditions of practice. A dental hygienist was introduced into each practice and a third operator was set up, usually in the dentist's private office. Working conditions were far from ideal with respect to space, location of wash basins, dental equipment and an adequate number of dental assistants.

Delivery system — Effective use of the expanded function dental hygienist requires a new delivery system. The key elements of that system are the dentist, the dental hygienist and three operatories, at least two of which should be fully equipped for all phases of dentistry. Also required are a recep-

tionist and two chairside assistants. A third chairside assistant is desirable but not essential.

Certain procedures must be performed entirely by the dentist. Others such as prophylaxis, patient education and polishing restorations may devolve exclusively to the dental hygienists. A third group of procedures are partly performed by the dentist and completed by the hygienist. They include amalgam and aesthetic anterior fillings. The dentist prepares cavities and the hygienist places the restorations. A little over half of the time needed for each restoration is required for procedures performed by the hygienist. It is these shared procedures which require careful co-ordination of activities. This co-ordination is easily attained after a short period of practice.

The dentist and dental hygienist move from operator to operator while the patient remains stationary. Very few delays occur with this approach. Following are a few basic principles of patient scheduling:

1. The hygienist requires independent work, such as prophylaxis, for the first appointment of a session while the dentist prepares one or, preferably, several cavities.
2. The dentist schedules a procedure he completes himself for the last appointment of a session.
3. Patients not requiring restorative treatment are alternated with those who do.
4. During a lengthy bridge appointment the hygienist may schedule several recall patients or lengthy scaling procedures.

If these general principles are followed few difficulties are encountered. Precise scheduling of individual patients is not required. If the dentist gets a little ahead of the hygienist he places a restoration or two himself. Occasionally the hygienist has a few extra minutes while waiting for the dentist. Usually this time can be put to good use. Where possible the dentist plans to provide two or three restorations at an appointment. If unforeseen difficulties occur, he simply reduces the amount of treatment. This approach reduces pressure on the dentist and enables him to accommodate emergencies with relative ease.

Method — Two dental hygienists worked in six private dental offices for periods of approximately three months. Each dentist kept detailed records of all procedures performed during the six weeks preceding the arrival of the hygienist. Similar records, which showed the individual contribution of the dentist and hygienist, were kept during the three months that the hygienist was present.

Increased daily costs in six private dental offices —
three month periods

Table 19

Dentist	Hygienist's salary	Assistants' salaries	Equipment and renovations at 15%	Rent	Supplies	Other	Total
1	30	15	3		6	4	\$58
3	30		3		4	4	\$41
4	30		3		4	4	\$41
5	30	15	8	3	4	4	\$64
6	30		3		4	4	\$41
7	30		3		4	4	\$41

Increased daily costs in two private dental offices —
12 month periods

Table 20

Dentist	Hygienist's salary	Assistants' salaries	Equipment and renovations at 15%	Rent	Supplies	Other	Total
Y	36	19	8	3	6	4	\$76
Z	30	15	5		4	4	\$58

Three of the dentists later obtained "permanent" dental hygienists. Productivity records were kept by these dentists for periods of four, 12 and 21 months.

Quality — The quality of the restorations produced in the three dental offices having "permanent" hygienists was assured by the same three evaluators who performed the evaluation in the public health clinic. The restorations placed by dental hygienists were rated equal or better than those placed by dentists in the same offices.

Productivity — Table 16 summarizes productivity increases registered during the three month study periods. The average increase was 37.4 per cent. There was considerable variation in the initial productivity of the dentists, mainly because of differences in hours of work, type of equipment and number of dental assistants. There was also a wide variation in the productivity increases obtained when a dental hygienist was added to the different offices. This difference is related to the previously mentioned factors as well as to the productivity of the two dental hygienists and the presence or absence of an additional dental assistant.

Table 17 shows the results obtained in the two offices where long-term records over a 12 month period were available. Productivity increases of 50.8 and 44.1 per cent were achieved. The dentist who achieved the 44.1 per cent increase used only one chairside assistant. When he later added a second chairside assistant his productivity during the next four months rose to 55.9 per cent above the baseline period.

It is probably more significant to assess increased productivity in terms of relative value units rather than percentage increase. Since fees are directly proportional to relative value units the economic benefits of the team approach may thereby be accurately measured.

Costs and benefits — To illustrate the cost-benefit changes which result when an expanded function dental hygienist is added to a private dental office we compared the increased economic benefits obtained and the increased costs incurred. The difference is considered to be "profit." Increased economic benefits were expressed in terms of the dollar value shown in the 1968 PEI fee schedule.¹⁹ Increased costs are based on the figures shown in Table 18. Only those costs which apply in a given office are considered.

Increased costs, increased benefits and profit in
six dental offices — three month periods

Table 21

Dentist	Increased RVU per day	Increased gross income per day (1968 PEI fee schedule)	Increased cost per day	Profit per day	Projected profit per year
1	25	\$125	\$58	\$67	\$15,745
3	14	\$ 70	\$41	\$29	\$ 6,815
4	15	\$ 75	\$41	\$34	\$ 7,990
5	19	\$ 95	\$64	\$31	\$ 7,285
6	19	\$ 95	\$41	\$54	\$12,690
7	18	\$ 90	\$41	\$49	\$11,515
Mean	18.3	\$91.70	\$47.70	\$44	\$10,340

Increased costs, increased benefits and profits in
two dental offices — 12 month periods

Table 22

Dentist	Increased RVU per day	Increased gross income per day (1968 PEI fee schedule)	Increased cost per day	Profit per day	Projected profit per year
Y	32	\$160	\$76	\$84	\$19,740
Z	15	\$ 75	\$58	\$17	\$ 3,995

Table 19 shows the increased costs for each of the six dental offices where hygienists worked for three month periods. The variations are due to differences in costs for equipment, supplies and assistants' salaries.

Table 20 shows the increased costs in the two offices with "permanent" hygienists where records were available for 12 month periods. The differences in costs are again attributable to variations in salaries, equipment and supplies.

Table 21 shows the increased benefits and costs in six dental offices where dental hygienists worked for three month periods. The increased benefits (increased gross income) were relatively low because of inadequate equipment and insufficient dental assistants. Cost increases were also restrained for similar reasons. In every office there was a significant financial profit, however.

Table 22 shows the increased benefits and costs in two dental offices on a 12 month basis. Differences in productivity increases and "profit" are noteworthy.

Tables 21 and 22 demonstrate that in every office there was a financial gain to the dentist.

The "profits" referred to here do not necessarily represent the actual financial gain achieved in this study. These profits would apply only if the dentists charged the fees listed in the 1968 PEI fee schedule.

Patient acceptance — Treatment was well tolerated by the more than 5,000 patients of six private dentists who received treatment from expanded function dental hygienists. More than half of them were adults. In the two offices where dental hygienists worked for nearly two years, only one patient refused to have a restoration completed by a hygienist. A significant number of these patients had recently moved to Prince Edward Island from elsewhere in Canada. Patients were told, in a matter of fact manner, that Miss Jones would complete their restorations. With very few exceptions there was no objection by the patient. Many obviously enjoyed the change.

Acceptance by dentists — The six private dentists who participated in this study ranged in age from 26 to 50 years, with from two to 20 years of prac-

tice experience. After the three month periods with dental hygienists, five of the six declared that they were most pleased with the new system of practice; one dentist was not comfortable with the changed circumstances.

Three of the five dentists who expressed satisfaction with the new method of practice proved their acceptance in a meaningful way. They invested \$4,000 — \$11,000 in office renovations and dental equipment and obtained expanded function dental hygienists for their offices. The risks were particularly high as there was no assurance that replacement hygienists would ever be available.

The other two dentists were given opportunities to obtain a permanent hygienist. However, one felt the risks outweighed the possible benefits. The other expressed a desire to obtain a hygienist but found it necessary to postpone action because of other prior financial commitments.

When the study terminated in January 1972, two of the "permanent" hygienists remained with their employers. The third left her employer in July 1971, having worked for one year.

Comment — The results obtained in the private practice portion of this study were very similar to those obtained in the public health clinic.

Productivity increases were generally less in private offices than in the public health clinic. Much of the difference was due to inadequate dental equipment and insufficient dental assistants. In addition, the dental hygienists in private offices spent considerably more time on patient education than the dentists were previously able to.

The additional costs involved in this new dental care delivery system are far outweighed by the dollar value of the benefits. Unfortunately, it was not possible to measure the precise reduction in the cost per unit of treatment as in the public health clinic.

Patient acceptance, as previously noted, was never a problem. It appears that when a patient has confidence in his dentist he also has confidence in the auxiliaries who work under his supervision.

The results obtained in private dental offices paralleled those of the Canadian Armed Forces studies. This was expected as the duties performed by the expanded function dental hygienists were similar to those performed by the army dental therapists. The results are also similar to those obtained in the United States studies using expanded function dental assistants.

All of these studies indicate that expanded function dental auxiliaries permit the dentist to provide dental care of equal or higher quality to a much larger number of patients. Further studies are re-

quired to evaluate in greater detail the costs and benefits when expanded function auxiliaries are introduced into a large number of private dental practices. Additional investigations involving dental hygienists performing a slightly increased range of duties would also be valuable.

Summary

The PEI dental manpower study has evaluated the effectiveness of dental hygienists with expanded functions in limited areas of restorative dentistry. Their new duties included application of rubber dam, placement of matrix retainers, cavity liners and protective bases as well as the insertion, contouring and finishing of amalgam, silicate cement and composite resin restorations. All of these procedures were provided for adults and children.

The study compared the productivity of various team combinations of dentists, hygienists, chairside assistants and receptionists in a public health children's clinic and in six private dental offices.

The addition of this auxiliary resulted in a new delivery system comprising the dentist, the dental hygienist, three dental operatories, a receptionist and two chairside assistants.

In the public health clinic the addition of a dental hygienist raised productivity by 73.4 per cent and diminished the unit cost of treatment by 29.6 per cent. Larger teams utilizing two dental hygienists achieved productivity increases of 106 to 134 per cent and unit cost reductions of 14.0 to 22.4 per cent.

Dental hygienists also worked in six private dental offices for periods of approximately three months. Although working conditions were far from ideal, an average productivity increase of 37.4 per cent was achieved. Two dentists maintained productivity increases of approximately 50 per cent over a 12 month period. The dollar value of the benefits exceeded the costs involved in each of the six private dental offices where hygienists worked.

The restorations placed by hygienists were equal or better than those placed by the dentists in whose offices the hygienists were employed.

Patient acceptance of the dental hygienists was excellent. Although they treated over 5,000 adults in private dental offices and over 3,000 children in public health clinics the number of complaints was negligible.

Not all dentists were comfortable with this new system of practice. Younger dentists, particularly

those who have been trained to work with auxiliaries, will likely adapt much more easily than those who have practised for a considerable number of years.

The results indicate that dental hygienists with limited duties in restorative dentistry increase the dentist's productivity sufficiently to make their employment economically worthwhile in private practices and in public health clinics for children. The new delivery system based on the expanded function dental hygienist enables the dentist to provide high quality dental care for at least 50 per cent more patients. The cost of providing this care is less than with conventional methods of dental practice.

The new dental care delivery system may be of considerable value to provinces that wish to introduce children's dental care programs. By training large numbers of dental hygienists the total dental manpower in a province can be significantly increased in a very few years. If the children's dental care program is introduced on a gradual basis the supply and the demand for dental manpower can be readily co-ordinated.

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Maxillo-mandibular surgery for correction of dentofacial deformities:

1. Pre-operative evaluation

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In this and five subsequent articles Drs. Weinberg and Moncarz present a review of current procedures employed in maxillo-mandibular surgery. Used in the mandible, the maxilla, or both jaws, they offer the oral surgeon a variety of techniques for correcting dentofacial deformities. The Journal expresses appreciation to the Royal College of Dentists of Canada for providing this series of articles.

Prior to the last two decades, North American oral surgeons focused their attention on the mandible as the facial unit which lent itself most readily to the surgical correction of jaw deformities. Now, thanks primarily to the pioneer efforts of their European colleagues, a variety of sound surgical techniques are available for the correction of deformities that exist in the maxilla or the mandible.

The entire jaw or its tooth-bearing segments may be mobilized in any direction so that there is virtually no malocclusion that cannot be corrected surgically.

Dentofacial deformities comprise malocclusion of the teeth, malrelation of the jaws and associated

facial disfigurement. People manifesting these deformities are invariably self-conscious. Their primary concern is therefore with aesthetic considerations. They may have underlying psychological and social problems. Functional improvement should be equally important and this factor merits major consideration in treatment planning. Following corrective surgery, some of the personality inadequacies are automatically eliminated in a large majority of cases.

Dentofacial deformities are broadly classified as prognathism, micrognathia and apertognathia.¹ In this series of articles they will be discussed under the headings of mandibular prognathism, maxillary protrusion (prognathism), maxillary retrusion (mandibular pseudoprognathism), mandibular retrusion and apertognathia.

Pre-operative planning

Prior to formulating a treatment plan, a battery of diagnostic aids are routinely employed. These include recording the history, clinical examination, obtaining facial and dental photographs, study casts, dental radiographs and extra-oral radiographs, particularly a cephalogram or a "true lateral skull" radiograph showing a soft tissue pro-

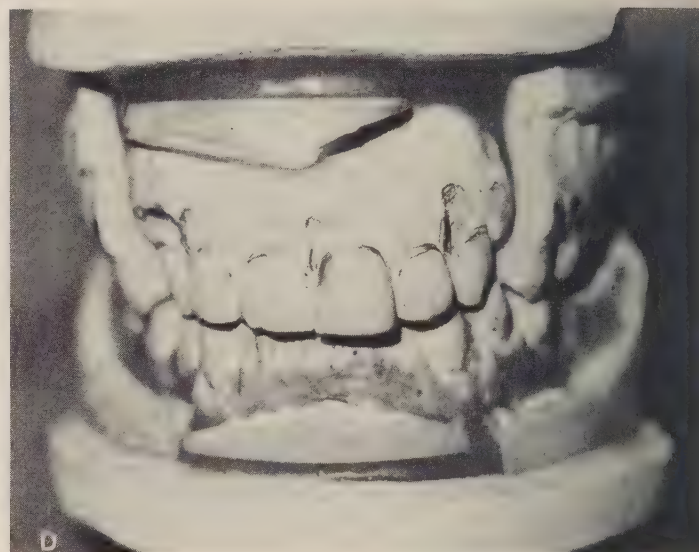
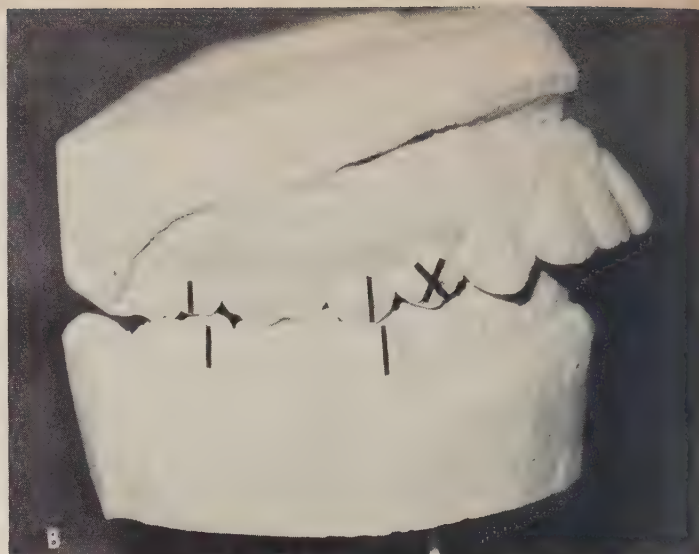
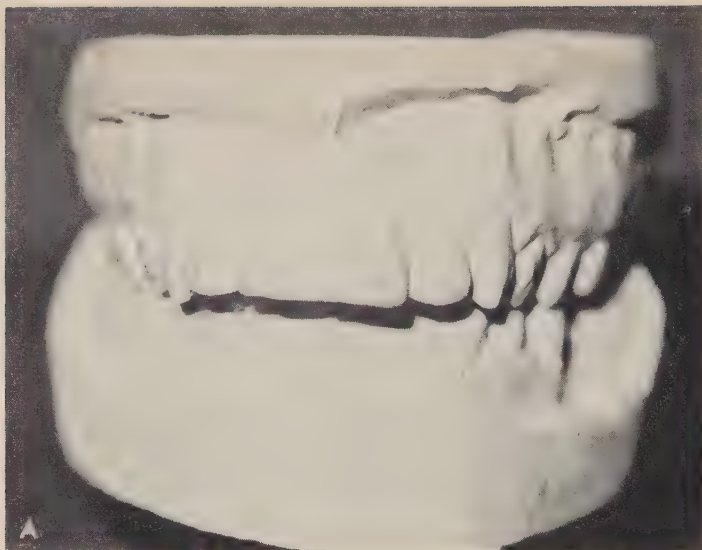


Fig 1 A, diagnostic casts illustrating the pre-operative occlusion. B, diagnostic casts indicating that a first bicuspid is to be extracted. C, working casts illustrating mock surgery. D, working casts with proposed osteotomized segments waxed into position for the new occlusion. E, postoperative result in the mouth.

file. The surgeon can then direct the surgery to the area of greatest deformity and formulate the "simplest" treatment plan that will produce the desired results and harmonious balance between aesthetics and function.

An orthodontic consultation is mandatory for patients with dentofacial deformities. The choice between orthodontic treatment or surgery depends on the age of the patient, the severity of the deformity, the duration of the treatment, his medical condition and socio-economic status. Surgery must be avoided until skeletal growth has ceased.² Most alveolar and some skeletal deformities should be treated by the orthodontist prior to the cessation of skeletal growth. In combined treatment, orthodontic therapy usually precedes the surgery.³ Minor orthodontic corrections can usually be accomplished post-surgically with good results. However, in cases of gross arch asymmetry, such as those necessitating palatal expansion or major orthodontic therapy, orthodontic treatment should always precede surgery in order to achieve the optimal occlusal relationship at time of surgery.

History and clinical examination — An adequate history establishes the prevalence of habits such as thumbsucking, lip chewing or tongue thrusting. A familial history may reveal the occurrence of skeletal jaw deformities in previous generations.

The clinical examination should reveal the soft tissue profile and any disharmony between the middle and lower thirds of the face. Muscle and lip tension are evaluated as is the resting and dynamic relationship of the lips to the position of the maxillary and mandibular incisors. Normal closure of the lip requires minimal contraction of the mentalis muscle. There may be increased mentalis muscle activity as the patient attempts to mask his abnormal profile with compensatory lip movements. In a relaxed state, the normal interlabial space is small.

In a Class II Division I malocclusion, there is a short tense upper lip with an increased interlabial space, and flattening of the chin from mentalis contracture should be anticipated.¹ In a Class I malocclusion, the upper lip elongates while the lower lip moves upward and forward, producing a flattening of the chin.⁴ A patient with a Class III malocclusion produces lip seal with normal upper lip movement and an upward and backward movement of the lower lip.⁵

The status of the dentition and supporting structures should be evaluated. Any carious teeth should be restored or removed prior to surgery. Where applicable, periodontal therapy should be instituted. A thorough prophylaxis is mandatory prior to the application of arch bars.

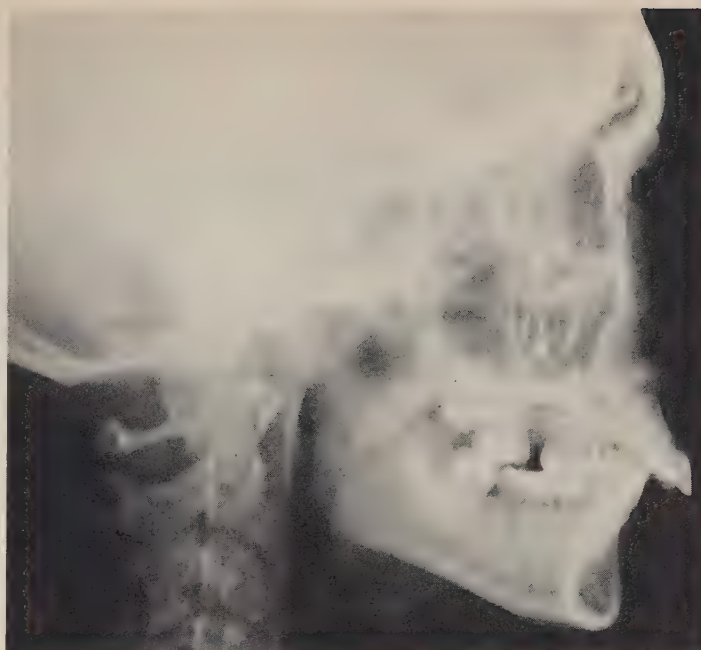


Fig 2 Cephalogram taken at rest position of the mandible.

Intra-oral radiographic survey — The complete dental radiographic survey is a valuable diagnostic tool in ruling out periapical or periodontal pathology, and in evaluating the stability of the teeth in the supporting tissue and their ability to withstand the stress of fixation appliances and immobilization.

Study casts — These are useful in assessing occlusal relationships.⁶ At least two sets are needed — one recording the exact pre-operative occlusion (Fig 1 a, b), the other as a working model. On the latter the entire lower or upper dentition can be advanced or retruded as a unit and a new occlusion can be established prior to surgery. Once the new relationship is determined, minor occlusal discrepancies can be eliminated by occlusal correction — first on the casts and later in the patient's dentition prior to surgery.

If an alveolar osteotomy or body osteotomy are indicated, mock surgery is carried out on the casts (Fig 1 c, d). Filling in the gaps with wax will stabilize the segments so that an accurate surgical splint or occlusal wafer can be constructed to duplicate the exact occlusal relationships determined.

Extra-oral radiographic survey — The cephalogram (Fig 2), taken at rest position of the mandible, aids in the precise location of the jaw deformity and in determining the proper operative site.⁷

If a cephalometer is not available, a true lateral skull radiograph will suffice. The soft tissue profile and certain bony points should be easily identifiable. The skeletal profile of the mandible and

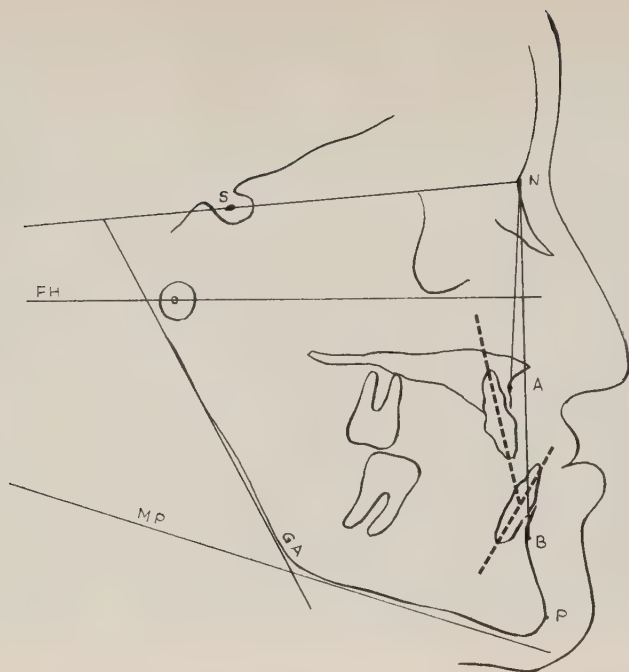


Fig 3 Tracing from the cephalogram illustrating the bony skeleton and soft tissue profile. Bony landmarks and reference planes are shown: S, sella; N, nasion; A, A-point; B, B-point; P, pogonion; FH, Frankfort horizontal plane; MP, mandibular plane; GA, gonial angle. Angles SNA, SNB, ANB are measured.

maxilla is then traced. Bony landmarks are identified, marked, reference planes are drawn^{8,9} (Fig 3) and a comparison is made with cephalometric norms.^{6,10,11} If necessary, templates are made and trial sections can be made until the desired location of the osteotomy or ostectomy is found. Many investigators⁶⁻⁸ have documented the practical application and value of cephalometric analyses; yet, it must be remembered that these studies are an adjunct to the diagnostic armamentarium and must be correlated with the clinical observations in order to arrive at a proper treatment plan.

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A simple method to identify teeth hypersensitive to thermal changes

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Patients who complain of widespread dentofacial pain, generally of pulpal origin, are often unable to determine in which tooth the pain originates. Although these patients frequently report severe discomfort from hot or cold stimuli, few practitioners utilize this information to full advantage during their examination. Indeed, many procrastinate rather than try to reproduce similar controlled conditions to accurately identify the offending tooth. Some resort to the use of hot gutta percha temporary stopping, placing the material against the coronal structure to test for hypersensitivity to heat, as advocated by some endodontic textbooks. But this method usually proves both frustrating and ineffective and requires a vivid imagination. The use of ethyl chloride to test for hypersensitivity to cold is also less than satisfactory and even an ice stick occasionally fails to disclose the offending tooth.

If thorough visual and radiographic examinations and vitality tests fail, a simple, inexpensive and extremely effective method for determining the source of the trouble is to isolate one tooth at a

time with rubber dam and, using a syringe, surround the crown of that tooth with water heated to the same temperature as a hot beverage, approximately 170 degrees F. The same technique can be employed to test for hypersensitivity to cold by substituting ice water.

This procedure invariably discloses the offending tooth, leaving little doubt in either the patient's or the dentist's mind.

Before removing the rubber dam from each tooth tested, it is important to evacuate the water from the area to prevent possible leakage through the dam which might affect the other teeth and cause confusion.

All maxillary and mandibular teeth are tested one by one as more than one tooth may be involved and the patient's first reactions may be misleading. Once the offending teeth are identified, the source of the problem may be eliminated by appropriate restorative measures or endodontic treatment.

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A cross-validation of variables affecting children's cooperative behaviour

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This study identified three criteria which may assist in predicting a child's behaviour during dental treatment. Negative behaviour is apt to increase if the child believes that he has a dental problem. His past medical experience and his attitude toward physicians influence behaviour at the first dental visit. Maternal anxiety can affect the behaviour of children, particularly those who are three and a half to four years old at their first dental appointment.

Cette étude révèle l'existence de trois critères susceptibles d'aider à prévoir le comportement de l'enfant qui reçoit des traitements dentaires. Le comportement négatif de l'enfant pourra s'intensifier quand ce dernier croit qu'il est l'objet d'un problème dentaire. Ses expériences médicales antérieures et son attitude à l'égard des médecins influencent son comportement lors de sa première visite chez le dentiste. L'anxiété maternelle peut aussi affecter le comportement des enfants, plus spécialement le comportement des enfants âgés de trois ans et demi à quatre ans, à l'occasion de leur première visite chez le dentiste.

During the past decade emphasis has been placed upon behavioural science research in paedodontics. Some of this research has been directed toward assessing the effect of certain office procedures on children's behaviour.^{1,2} Others have devoted their attention to relating certain antecedent variables to the behaviour of children during their dental visits.^{3,4} Few of these studies have been replicated. Yet, it is possible for a "statistically significant" finding from a given study to be an artifact of the special conditions of that study. For these reasons it is considered wise to attempt to duplicate important findings with a new sample before clinical inferences are made.

In a previous publication⁵ the principal authors of this paper found that a child's awareness of a dental problem, his mother's anxiety, the family's social status and certain aspects of his medical history were statistically significant when related to the child's cooperative behaviour at the first dental visit. These results were obtained with one clinician in one private dental office. If the results can be usefully generalized, they should be reproducible in a different setting. The purpose of this paper, therefore, is to attempt to cross-validate the findings of the previous investigation.

Review of literature

The objective findings related to the present investigation are few. Bell⁶ studied the behaviour of children undergoing various dental procedures by interviewing them and their parents. She found that parents prepared children for their dental visits by telling them to expect pain but did not relate this to their behaviour. Another investigation⁷ used a questionnaire to study the aetiology of dental fears in adults and concluded that dental fears seem to have their source in the interactions of the developing individual with his parents and other significant persons. Frankl et al⁸ concluded that the behaviour pattern was independent of sex, race, socio-economic background and attendance at a nursery school. In contrast to these findings, another study has found that social status of the family, the parents' educational level and the attitude of the parents toward the child's extra-family contacts were indeed important.⁹ More recently, Johnson and Baldwin^{10,11} have measured maternal anxiety with the Manifest Anxiety Scale (MAS) and showed that this variable related to children's behaviour. They also found that factors such as sex, age, purpose of visit and history of an unpleasant medical or dental experience were not statistically significant when related to behaviour.

Materials and methods

This investigation was conducted with children in a private operatory at the University of Western Ontario Dental Clinic. The children were between three and six years of age, without previous dental experience and accompanied by their mothers.

Upon arrival at the reception desk, the mother was given the routine clinic forms and a questionnaire to complete. This questionnaire elicited information about the child's age, sex and father's occupation. It also contained questions from the work of Johnson and Baldwin,¹¹ questions developed in our previous study and the Taylor Manifest Anxiety Scale.¹² A portion of the questionnaire is shown in Table 1.

The children experienced their first dental appointments while the mothers remained in the reception area. Each child was given a routine dental examination by the same paedodontist. The cooperative behaviour for each child was rated by two observers independently at the end of the following four predetermined phases: (1) the separation procedure when the child was taken from the reception area to the operatory; (2) the intro-

A part of the questionnaire

Table 1

1	How do you think your child has reacted to past medical procedures?	Very poor Moderately poor Moderately good Very good
2	How do you think your child will react to this procedure?	Very poor Moderately poor Moderately good Very good
3	How would you rate your child's anxiety (fear, nervousness) at this moment?	High Moderately high Moderately low Low
4	How would you rate your own anxiety (fear, nervousness) at this moment?	High Moderately high Moderately low Low
6	Does your child think there is anything wrong with his (her) teeth, such as a chipped tooth, decayed tooth, gumboil, etc?	Yes No
9	In the last two years my child's contacts with medical doctors have been:	Always enjoyable Usually enjoyable Usually unpleasant Always unpleasant
10	In the last two years my child usually looks forward to contact with medical people:	With much fear With little fear With no fear
11	In the last two years my child has experienced actual physical pain in connection with medical procedures:	Quite often (3 or more times) Occasionally (1 or 2 times) None

duction procedure when the child entered the dental operatory, was seated, shown the light, mirror, explorer, air syringe and radiographic equipment by the dental assistant and was then introduced to the dentist; (3) the clinical examination when the mirror, explorer and air syringe were used in the mouth; and (4) the radiographic procedure which consisted of two anterior occlusal radiographs and two bitewing radiographs.

The four-point scale of Frankl et al⁸ (Table 2) was used to classify behaviour. Since there were four four-point measurements of behaviour for each subject, the total range possible for the rated behaviour of each child was between four and 16, the children exhibiting the better cooperative behaviour having the highest ratings.

Rating	Categories of behaviour
1	Definitely negative Refusal of treatment, crying forcefully or any overt evidence of extreme negativism
2	Negative Reluctant to accept treatment, uncooperative, some evidence of negative attitude but not pronounced, i.e., sullen, withdrawn
3	Positive Acceptance of treatment; at times cautious, willingness to comply with the dentist, at times with reservation, but follows the directions cooperatively
4	Definitely positive Good rapport with dentist, interested in the dental procedure, laughing and enjoying the situation

Since the behaviour of the children was rated independently by the two observers, whenever a rating discrepancy occurred it was resolved by discussion after the appointment. To determine the rating reliability, a record was maintained prior to the resolution of any disagreements. A formula determining the percentage of agreement between observers was used to assess the inter-observer reliability.

Throughout the procedure an effort was made to obtain good cooperative behaviour by the tell-show-do technique.¹³ The clinical examination consisted of examination of the facial profile, the occlusion and the teeth. Every effort was made to avoid causing pain. If more clinical probing or radiographic procedures were necessary they were performed after the primary data had been collected.

Correlations, analysis of variance and Fisher's "t" test were used to determine the relationships of the individual questionnaire items to the children's cooperative behaviour score. Linear regression analyses were used to test for the interrelationships between the numerous variables.

Results and discussion

The study sample consisted of 65 children (30 girls and 35 boys). The experimental procedure was

identical to that used in our previous investigation; however, the subjects, office environment and personnel differed.

The inter-observer ratings of the subjects' cooperative behaviour showed 92.6 per cent agreement. This high level of agreement allowed a reconfirmation of the reliability of the cooperative behaviour rating technique.

The results of the statistical analyses relating the mothers' questionnaire responses to the children's degree of cooperative behaviour showed that nine of 18 items analysed were significantly related. In the former study⁵ only six items had attained statistical significance. Since the purpose of this study was to cross-validate the earlier results, the discussion is focused on these six items. Each of these variables is discussed individually.

Past medical experience — There were five questions which were related to the variable of past medical experience. Table 3 offers results of four items where the analysis indicated statistically significant relationships at or below the 5 per cent level of confidence. The medial question which did not produce significant results was one which determined the frequency of the child's medical visits.

These data tend to confirm that certain aspects of the child's medical history do affect his cooperative behaviour in the dental office. The question, "How has your child behaved during past medical procedures?", in the present study agreed statistically with those of Johnson and Baldwin,¹⁰ that is, the child's behaviour in past medical contacts does relate to his behaviour in the dental situation. In a previous investigation this same question did not quite attain statistical significance.¹⁴ Further analysis of the relationship between the medical history and the children's behaviour through additional questions, however, once more indicated that it is the child's attitude toward physicians and the quality of his relationship with his physician which are more significantly related to his cooperative behaviour at the first dental visit than the quantity of his previous visits. Our previous study indicated that the pain from past medical experiences might be a relevant variable to the child's cooperative dental behaviour.⁵ The present study also indicates that this is the case.

Although the information provided in Table 3 identifies the medical questions which were significantly related to cooperative behaviour, it does not identify which question accounts for the highest degree of the child's cooperation at the time of

his first dental appointment. To provide information concerning the relative importance of each of the questions, a regression analysis was performed for the total group. The analysis indicated that question 9 was most highly related to the child's cooperative behaviour. This result supports previous findings that the question related to the quality of the child's past medical experience is of major importance.

Maternal anxiety — Previous research^{5,8} has shown that the age factor should be considered when evaluating the relevance of the mothers' anxieties to the children's cooperative behaviour. Thirty-three of the children in the sample were in the younger, 36-47 month, age group and 32 children were from 48 to 71 months of age. When the behaviour of the children in these two groups was related to both question 4 and the MAS, a significant relationship was found for only the younger group. This suggests that the finding of significance for maternal anxiety to the cooperative behaviour of the total sample is actually due only to the younger children in the sample. The specific findings for this variable are offered in Table 4.

Two methods were used to measure maternal anxiety which have certain important differences. The MAS was developed by Taylor¹² and consists of 50 items selected on the basis of their ability to detect clinical anxiety. The MAS is considered to measure a predisposition to anxiety or a chronic anxiety state.¹⁵ The present significant MAS relationship agrees with the findings of earlier investigations.^{5,10,11}

The single question (question 4) which simply asked the mother to rate her own anxiety was also significantly related to children's cooperative behaviour and replicated our previous results. The findings from both of our studies differed from those of Johnson and Baldwin.^{10,11} This may be due to certain differences between the studies. In our studies the children were younger than in those of Johnson and Baldwin. Another potentially relevant factor was that in their studies some of the children had received previous dental appointments, whereas in our studies all subjects were without previous dental experience. In both of our studies we found that asking the mother about her level of anxiety was of higher significance when related to the children's cooperative behaviour than was the MAS measurement. A possible explanation is that the Taylor scale measures a chronic anxiety which might be referred to as an "anxiety trait." On the other hand, question 4 may be measuring an anxiety level in relation to a preconceived den-

Medical experience questions significantly related to children's cooperative behaviour Table 3

Question	Identification	Significance Level ¹
1	Past medical procedures	0.05
9	Emotional quality of past medical experiences	0.001
10	Child's attitude toward physicians	0.025
11	Medical pain experience	0.005

¹"F" tests (analysis of variance) were used for all these items

Relationships between the maternal anxiety measurements Table 4

	Question 4 level of significance ¹	MAS level of significance ²
Total group	0.001	0.05
Younger group	0.025	0.05
Older group	NS	NS

¹Analysis of variance "F" test

²Correlation coefficient "r"

tal fear and thus may be measuring an "anxiety state" related to that fear.

The results in our present study also support our previous finding that the maternal anxiety relationship is more profound with younger preschool children than with older ones. It is interesting to note that this finding coincides with the child development description of Gesell¹⁶ and other child developmentalists who suggest that there is a declining importance of the mother to the child's security as the child grows older.

This information provides a plausible explanation as to why Frankl et al⁸ found that separating the mother-child pair greatly influenced the behaviour of three to four year old children. It suggests that perhaps all children should not be separated immediately from their parents and that greater consideration should be given to the method of mother-child separation, especially for younger preschool children.

Socio-economic distribution of the study population (U, upper; M, middle; L, lower)

Table 5

North-Hatt ranking	No. of subjects
UU	0
MU	3
LU	2
UM	22
MM	24
IM	8
UL	3
ML	2
LL	1

Awareness of dental problems — Question 6 asked the mother if her child believed that there was a problem with his dentition. When this item was related to the children's cooperative behaviour for the entire study population it proved to be significant at the 0.025 level of confidence. The regression analysis also found that this item was related to the children's cooperative behaviour.

These data support the previous finding that the chance of negative behaviour at the first dental appointment rises significantly when a child believes that he has a dental problem.⁵ The finding, however, may be interpreted as leading to the suggestion that dentists should educate parents to have their children's first dental appointment prior to their observing any obvious dental defects.

Family social status — Using the North-Hatt ranking of occupations,¹⁷ the social status of the children's families was identified. Table 5 shows the nine categories of this ranking method, ranging from lower-lower to upper-upper class and the number of patients in each category. The results of the correlation which related social status to cooperative behaviour did not yield a significant result.

In our previous investigation we found this variable to be significant. However, since only one child in that study was from the lower socio-economic groupings we hesitated to place emphasis on the present finding. It should be noted that the present study had a better socio-economic dis-

tribution than the previous one and does support negative results of other investigators.^{8,10} Thus, the literature related to the social class variable could at best be described as inconclusive. Since this variable has great relevance for public health dentistry, additional research should be performed.

The statistical information reported thus far does not offer information concerning either the relationship between the variables or a complete report of those items found to be most closely related to cooperative behaviour. This latter information was provided by the regression analysis. The following questions were found to be highly related for the total group of subjects in descending order of importance:

Question 9 — related to the quality of the child's past medical experience;

Question 4 — related to the mother's prediction of her own anxiety;

Question 6 — related to the child's awareness of a dental problem.

Previously Johnson and Baldwin¹¹ suggested a set of questions which might predict behaviour. When their prediction method was applied to one of our study groups the results were valid but not sufficiently reliable for clinical use.¹⁴ When the three questions from this regression analysis were examined for their prediction ability it was found that any two negative responses predicted uncooperatives 89 per cent of the time. In one instance misbehaviour was not predicted. When these questions were applied to our initial study group the predictive ability decreased to 70 per cent, a level which we consider unacceptable for clinical application. This demonstrates the difficulty in establishing a universal system for behaviour prediction. However, the three questions do provide information which can be of assistance in child management and it is suggested that they might be included with routine office history forms to obtain further insight into a child's background.

Summary and conclusions

The behaviour of 65 preschool children was rated independently by two observers at four predetermined intervals during their first visit to a dentist. Mothers provided basic information by completing a questionnaire. This investigation supported the following conclusions:

1. The chances of negative behaviour increase if a child believes that he has a dental problem;

2. A child's past medical experience, particularly his attitude toward his physician, influences his behaviour at his first dental visit; and

3. A positive relationship exists between maternal anxiety and the child's behaviour, particularly for children 36 to 47 months of age at their first dental visit.

This research was supported by Ontario Health Resources Development Grant Model DM 67.

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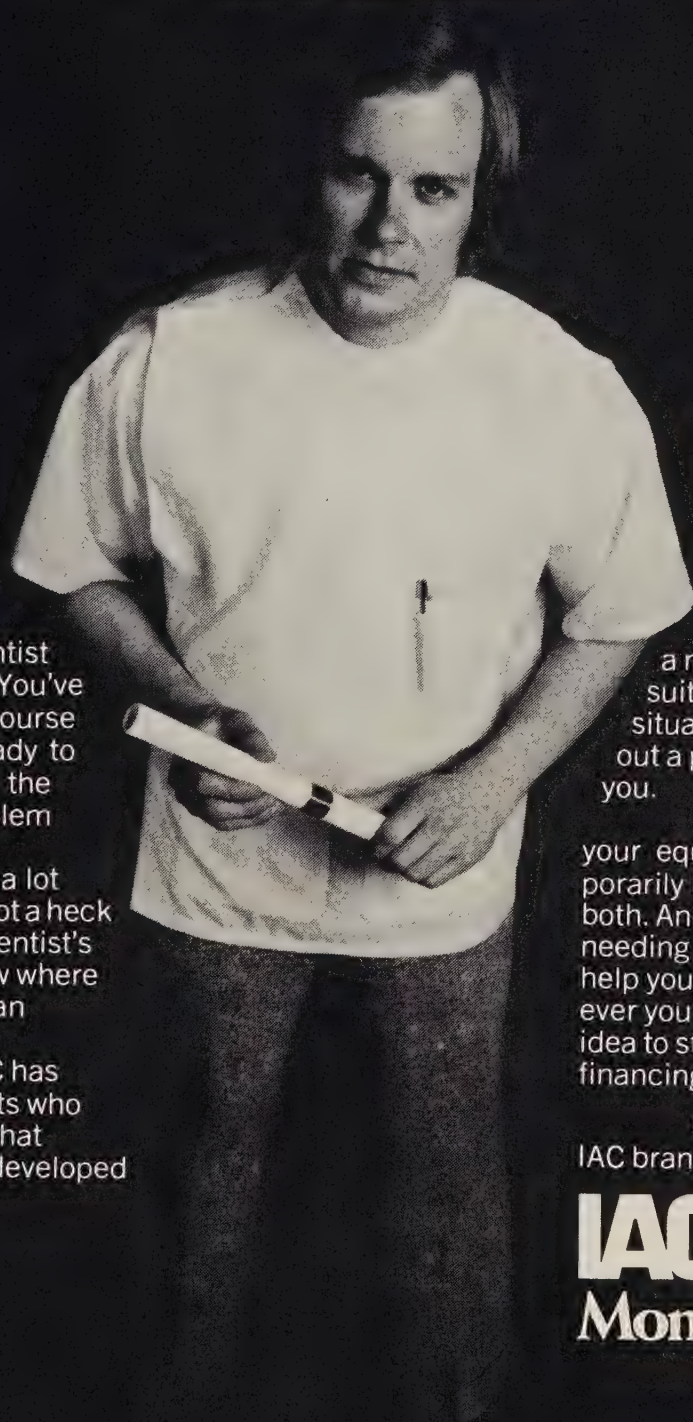


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Book Reviews

Dental Radiography

Richard C. O'Brien. Ed 2.
Toronto, W. B. Saunders Company Canada Limited, 1972.
218 p. Illus. \$8.25

The content of the second edition of this book has been expanded by almost a third, although the general format, chapter titles and sequence remain essentially unchanged. A chapter on interpretation has been added to give the radiographer some idea of the ab-

normalities which may be disclosed by her examination and thus underscores the importance of her role in providing quality films. The management of patients who may be reluctant to submit to radiographic examination is furthered by the inclusion of pertinent material which will permit plausible explanations.

Extra-oral and occlusal projections, as well as long cone-parallel and panoramic procedures, have received more complete treatment than in the first edition. This presents a well balanced and unbiased coverage of available oral radiographic techniques.

The supporting illustrations which amplify the text have been updated to demonstrate the latest equipment modifications and provide a contemporary credibility.

The changes and additions enhance an already good book. It is recom-

mended not only to neophyte radiographers, but to experienced personnel seeking to upgrade technical quality.

D. W. Stoneman

Dentistry for the Special Patient: The Aged, Chronically Ill and Handicapped

A. Davidoff, S. Winkler and M. H. M. Lee, ed. Toronto, W. B. Saunders Company Canada Limited, 1972. 318 p. Illus. \$20.60

This excellent book on the dental care of the special patient is a long needed addition to the dental literature. Its main importance, as stated in the introduction, is "that it will help fill a gap in professional knowledge and practice and thereby be a boon to an enormous population whose dental needs have been heretofore largely neglected." The three editors, one medical and two dental, one of whom died during the preparation of this book, all have had long experience in providing services to special patients.

A broad range of topics pertinent to the integration of dental care into the concept of total patient care is presented. The first four chapters provide a general introduction dealing with chronic disease, physiology, immunity and disability with references to dentistry where appropriate. This information provides a sound basis for the following 13 chapters which are specifically dentally oriented.

The dental aspects of ageing, problems of providing dental care and psychosocial factors are covered with their implications for the dental profession. The dental problems and management of communication disorders, dentistry for the homebound, oral surgery, prosthodontics, food and nutrition, periodontal disease, endodontics, anaesthesia, patients undergoing medical treatment and oral neoplasms are each adequately discussed, for the purposes of this book, in individual chapters. There are numerous current references throughout the book for any reader who wishes to pursue a particular topic in greater depth.

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nel in the delivery of dental care to these patients. More emphasis and elaboration on this subject would make a valuable contribution to this book.

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In my opinion *Dentistry for the Special Patient* is the finest contribution to date to this badly neglected area of dentistry. The material is presented in a most readable form and will be invaluable to any personnel involved in dentistry for this type of patient. This book should be read by all practitioners who treat such patients in their practices, institutions or hospitals.

B. P. Martinello

Third Symposium on Oral Sensation and Perception

J. F. Bosma, ed. Springfield, Illinois. Charles C. Thomas, 1972. 465 p. Illus. \$46.50

This book reports the proceedings of a conference held at the National Institutes of Health, Maryland, in November, 1970. This Third Symposium was concerned with the normal and pathological morphology and function of the mouth of the infant. According to the editor, it was designed to expand and extend material from the two previous symposia, held in 1964 and 1967, which dealt with more general aspects of orofacial sensory and motor mechanisms.

Over 30 clinicians and scientists contribute to 20 chapters and discussions which emphasize the form and function of the oral cavity of the foetus, neonate and infant. The first seven chapters are particularly concerned with the gross anatomy, his-

tology and embryology of the oral tissues at various stages of development. The absence of related physiological, and especially neurophysiological, research material is quite apparent and underscores the unfortunate paucity of studies being carried out in this area.

The remaining chapters are concerned primarily with behavioural or psychophysical investigations of normal and abnormal oral function. The "infancy" of research in this field is exemplified by the relatively simple approaches and techniques (e.g. direct observation or film analysis of infant orofacial movements) used in many of the studies. Oral motor patterns, and suckling in particular, are analysed in terms of their elicitation and their response characteristics. Attention is also directed to their association with changes in oral and extra-oral sensory experiences and in the behavioural state, and their modification in infants with anatomical (e.g. cleft lip and palate) or sensory (somatic, auditory and visual) deficits.

Most of the chapters are well illustrated and clearly written. The book should serve as an important reference book for those students and clinicians concerned with the well-being and treatment of the healthy or handicapped infant, and for those interested in the basis of sensory and motor form and function in the orofacial region.

B. J. Sessle

Dental Practitioner Handbook: An Outline of Oral Surgery, Parts I and II

H. C. Killey, G. R. Seward and L. W. Kay. Bristol, John Wright & Sons, 1971. (Available in Canada from The Macmillan Company of Canada Ltd, Toronto) Part I: 190 p. Illus. \$6.50. Part II: 260 p. Illus. \$7.95

Part I has been written as a guide for postgraduate and senior undergraduate students and for dental practitioners. It is not a textbook but rather a concise, well organized handbook, at a reasonable cost. Some of the terminology, instruments and drugs mentioned differ from those currently in use in Canada. However, the tech-

niques and principles are basic to good surgery.

Part II deals with more advanced oral surgical procedures and will be of interest to oral surgeons and students of oral surgery. It will be a useful reference to procedures but is not intended to offer instruction in technique or management. The bibliographies at the conclusion of each section are complete and up-to-date and will serve as an excellent guide for the student of oral surgery.

Both books will be valuable to a library on oral surgery and of special assistance to the student.

G. K. Hurd

Orthodontics in Dental Practice

V. Sassouni, with the collaboration of E. J. Forrest. St. Louis, The C. V. Mosby Company, 1971. 572 p. Illus. \$25.75

The purpose of this book is to give a broad basis of orthodontic information to enable the student to cope with cases seen in general practice and to understand the more complicated problems demanding specialist skills.

The first section, "Basic Principles," fully covers anatomy, classification of malocclusions, growth and development, genetics and dentofacial pathology. Like many orthodontic texts, it is rather lengthy. Too many authors seem to believe that dental anatomy, although completely covered in early undergraduate years, can only be properly understood by specialists; hence many of these texts carry superfluous material.

The second section, "Orthodontics versus Orthopaedics," covers the different forms and forces of tooth movement and discusses the biology of tissue reactions. The third section covers orthodontic appliances and techniques, stressing detailed fabrication of the devices used in general practice, and explaining the functions of the more complicated mechanisms of the specialist.

The fourth and final section deals with the specific treatments that can be handled in family practice. This is well illustrated with ample case reports,

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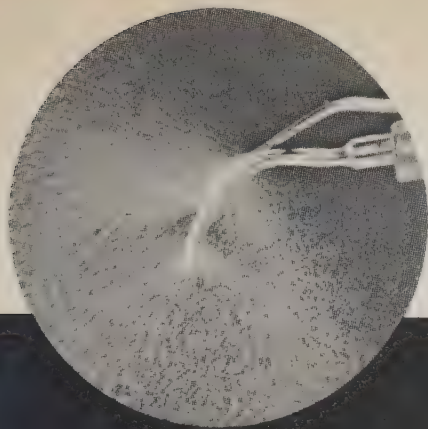
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analyses with cephalometric tracings, and graphs. However, while cephalometric technique is valuable in the undergraduate teaching of growth, few general practitioners are apt to use it in their treatment.

My chief criticism is the sparse information on the timing of treatment for various types of malocclusion. In a guide and reference book for family practitioners complete coverage of this subject is essential. On the other hand, this book contains a wealth of condensed, up-to-date scientific information that is very helpful to the orthodontist.

M. R. Culbert

Additions to the Library

AMERICAN DENTAL ASSOCIATION. 23rd National Dental Health Conference. Chicago, April 24-26, 1972. 567 p

ANATOMICUS MEDICUS. Multiple choice questions in anatomy. London, Baillière Tindall, 1972. 118 p

CANADIAN DENTAL ASSOCIATION. COUNCIL ON DENTAL EDUCATION. Conference on continuing dental education held in Toronto, September 25-27, 1972. 131 p

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DENTAL MORPHOLOGY AND EVOLUTION. Second International Symposium on Dental Morphology, Royal Holloway College in England, 1968. Edited by A. A. Dahlberg. Chicago, University of Chicago Press, 1971. 350 p. \$20.00

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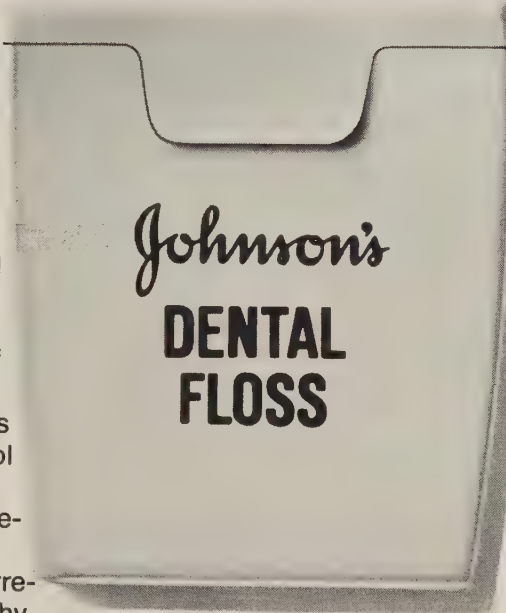
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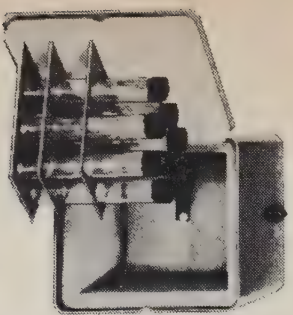
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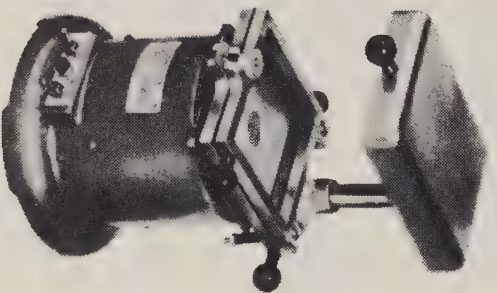
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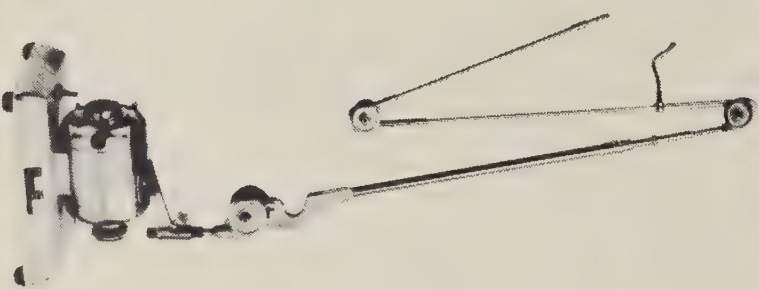
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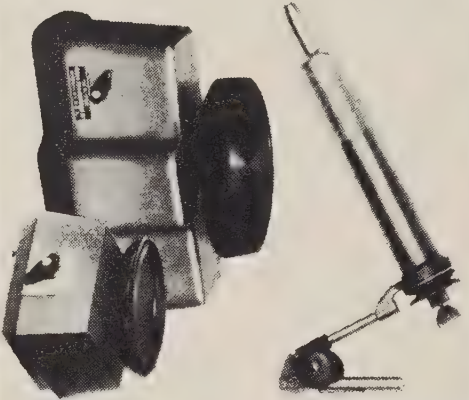
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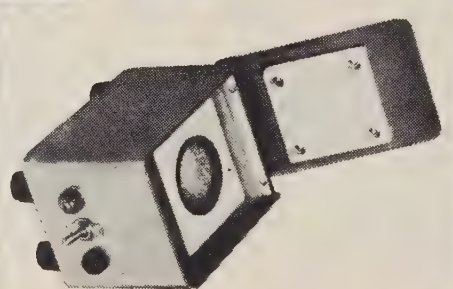
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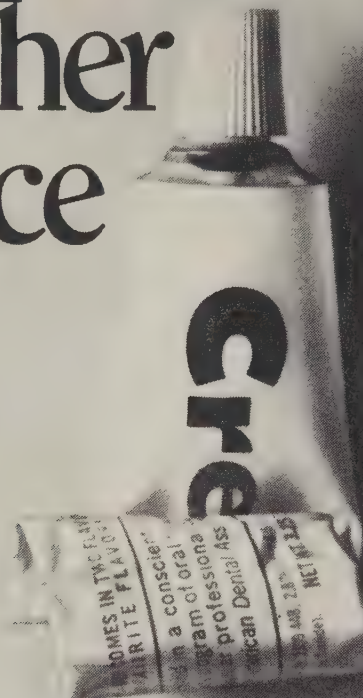
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May/Mai 1973/Volume 39/No 5

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Cover photo by John Plow. The photo was taken at the Faculty of Dentistry, University of Toronto. Dr. R. Lundy (centre) is a periodontist; Eva Saxell and O.A. Struk are dental students.

To be published/Prochaines publications
Maxillo-mandibular surgery for correction of dentofacial deformities: 3. Maxillary protrusion

Etching effect of topical fluorides on dental porcelains

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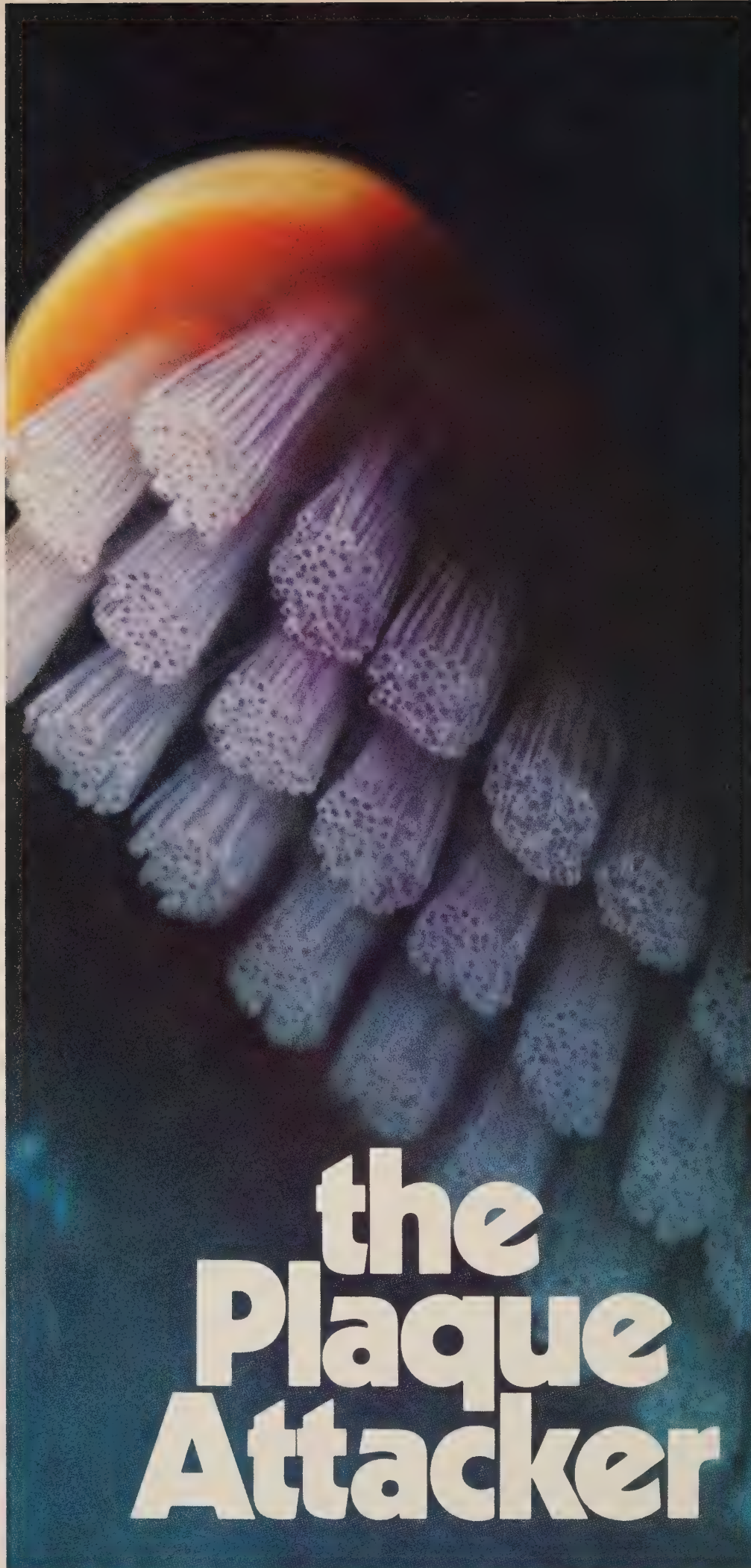
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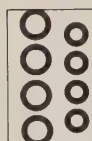


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*Goldman, H. M., and Cohen, D. W.: Periodontal Therapy, ed. 4, St. Louis, The C. V. Mosby Company, 1968, pp. 319-320.

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Announcements/Avis

Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont, Oct 2-5
1975 St. John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1973 Sydney, Australia, July 15-20
1974 London, England, Sept 8-14

Royal College of Dentists of Canada

Part I Examinations (Basic Sciences) Sept 24, 1973. Applications and \$100 fee must be received before Mar 31, 1973.

Part II Examinations (Oral) Dec 7-8, 1973. Eligibility is based on successful completion of the Part I Examination, plus submission of required case histories, and the lapse of five years since the candidate began his graduate training. Written intent to sit this examination with \$100 examination fee must be received before Mar 31, 1973.

Application forms for the Part I Examinations and further information may be obtained from J.E. Speck, Secretary-Registrar-Treasurer, Suite 614, 170 St. George St, Toronto, Ont M5R 2M8.

Canadian Meetings

Canadian Academy of Oral Pathology, at Montreal. May 14-19, 1973. Dennis Forest, Faculté de chirurgie dentaire, Université de Montréal, CP 6128, Montréal 101, Qué.

Association des Spécialistes en Chirurgie Buccale du Québec, à Montréal. 15-16 mai 1973. Guy Maranda, 565 St-Jean, Québec 4, Qué.

Nova Scotia Dental Association, at Mountain Gap Inn, Smith's Cove, NS. June 1-2, 1973. S. G. Bagnall, PO Box 604, Halifax, NS.

Alberta Dental Association, at Lethbridge. June 7-8, 1973. R. D. Kinniburgh, Centre Village Mall, 1204 — 2nd Ave A N, Lethbridge, Alta.

Association of Canadian Faculties of Dentistry, at Château Montebello, Montebello, Que. June 12-15, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Western Canada Dental Society, at Winnipeg. June 27-30, 1973. J. P. Beattie, 308 Kennedy St, Winnipeg 2, Man.

Dental Hygiene Section, Western Canada Dental Convention, at Winnipeg Inn, Winnipeg. June 30, 1973. Mrs. Vivian Burdenium, 2 Peel Cres, Winnipeg, Man.

Northern Ontario Dental Association, at Kirkland Lake, Ont. Sept 7-9, 1973. J.R. Brookfield, 2 Second St, Kirkland Lake, Ont.

Atlantic Provinces Dental Convention, at Charlottetown, PEI. Sept 16-19, 1973. S. G. Bagnall, PO Box 604, Halifax, NS.

Canadian Society of Oral Surgeons, at Mont-Gabriel Lodge, Mont Gabriel, Que. Oct 7-9, 1973. Pierre Surprenant, Suite 201, 230 King St W, Sherbrooke, Que.

Canadian Academy of Periodontology, at Vancouver. Oct 12-13, 1973. J. D. Stewart, 311 Rubidge St, Peterborough, Ont K9J 3P3.

Canadian Academy of Restorative Dentistry, at Vancouver. Oct 12-13, 1973. E. V. Gowda, Suite 201, 1590 Bellevue Ave, West Vancouver, BC.

Canadian Academy of Prosthodontics, at Vancouver. Oct 13, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Canadian Association of Orthodontists, at Vancouver. Oct 13-15, 1973. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask S7K 3M4.

Canadian Academy of Endodontics, at Vancouver. Oct 14-15, 1973. P. R. Dow, Suite 1009, 925 W Georgia St, Vancouver 1, BC.

Canadian Society of Public Health Dentists, at Vancouver. Oct 14-17, 1973. J. M. Conchie, 14265-56th Ave, Surrey, BC.

Canadian Dental Hygienists Association, at Vancouver. Oct 14-18, 1973. Linda J. Hunter, 3350 Cedar Crescent, Vancouver 9, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Newfoundland Dental Association, at Holiday Inn, St. John's, Nfld. Nov 7-10, 1973. Gordon Anthony, PO Box 9505, St. John's, Nfld.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

Vancouver & District Dental Society, at Hotel Vancouver, Vancouver. Dec 7-8, 1973. Vancouver & District Dental Society, Suite 325, 925 West Georgia St, Vancouver 1, BC.

International Meetings

American Academy of Oral Pathology, at Bonaventure Hotel, Montreal. May 15-19, 1973. G. G. Blozis, College of Dentistry, Ohio State University, Columbus, Ohio 43210, USA.

Northwest Academy of Dental Medicine, at the Empress, Victoria, BC. May 24-27, 1973. Gladys H. Underwood, 610 SW Alder St, Portland, Oregon 97205, USA.

Journées européennes de narcodontologie, à Bologna, Italie. 8-10 juin 1973. Secrétariat, Via S. Vitale 56, 40125 Bologna, Italie.

British Dental Association, at Southport, England. June 11-15, 1973. J. N. Peacock, 64 Wimpole St, London W1M 8AL, England.

International Symposium on Biological Medicine, at Lausanne, Switzerland. June 20-24, 1973. III International Symposium on Biological Medicine, chemin du Frêne 11, CH-1004 Lausanne, Switzerland.

American Dental Society of Europe, at Lucerne, Switzerland. July 1-4, 1973. James Page, 65 Mount Ephraim, Tunbridge Wells, England.

4^e Congrès International de Pédodontie, à Paris. 10-13 juillet 1973. Secrétariat Société Française de Pédodontie, 33 rue Poissonnière, Paris 2^e, France.

Australian Society of Endodontology, at Sebel Town House, Sydney, Australia. July 12-13, 1973. E. H. Ryan, 185 Elizabeth St, Sydney, 2000, Australia.

International Implant Congress, at Sydney, Australia. July 12-14, 1973. T. T. Vajda, PO Box 1478, GPO Sydney, NSW, Australia, 2001.

International Association of Oral Surgeons, at Sydney, Australia. July 14-20, 1973. Sir Terence Ward, Royal College of Surgeons of England, 35/43 Lincoln's Inn Fields, London, WC2A 3PN, England.

Fédération Dentaire Internationale and Australian Dental Congress, at Sydney, Australia. July 15-20, 1973. G. H. Leatherman, 64 Wimpole St, London W1M 8AL, England.

Rhodesian Dental Congress, at Victoria Falls, Rhodesia. July 31-Aug 3, 1973. A. G. Winchester, PO Box 1367, Salisbury, Rhodesia.

Third International Orthodontic Congress, at Royal Festival Hall, London, England. Aug 13-18, 1973. W. J. Tulley, 43 Charles St, London W1X 7PB, England.

New Zealand Dental Association, at Queenstown, NZ. Sept 20-22, 1973. Alastair Murray, 69 Don St, Invercargill, NZ.

Japanese Association for Dental Science, at Tokyo. Sept 22-26, 1973. J. Okamura, c/o Nippon Dental College, Fujimi, 1-Chome Chiyoda-ku, Tokyo, Japan.

First French Congress of Stomatology and Maxillofacial Surgery, at Paris. Sept 27-29, 1973. Secrétariat Mme Palaysi Institut de Stomatologie, 47 blvd de l'Hôpital, 75013 Paris, France.

International Symposium on the Immunoglobulin A System, at University of Alabama, Birmingham. Oct 23-25, 1973. F. W. Kraus, Box 103, University Station, Birmingham, Ala 35294, USA.

American Academy of Periodontology, at San Antonio, Texas. Oct 24-27, 1973. American Academy of Periodontology, Room 924, 211 East Chicago Ave, Chicago, Ill 60611 USA.

American Dental Association, at Houston, Texas. Oct 28-Nov 1, 1973. C. G. Watson, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Association of American Women Dentists, at Houston Oaks Hotel, Houston, Texas. Oct 30, 1973. Hazel F. Haughey, Cold Brook Rd, Wilmington, Vermont 05363, USA.

American Institute of Oral Biology, at Spa Hotel, Palm Springs, Calif. Nov 16-20, 1973. Membership Chairman, PO Box 897, Glendora, Calif 91740, USA.

Association Dentaire Française, à Parc des Expositions, Porte de Versailles, Paris. 13-18 nov 1973. Jacques Charon, 22 avenue de Villiers, 75-Paris 17^{ème}, France.

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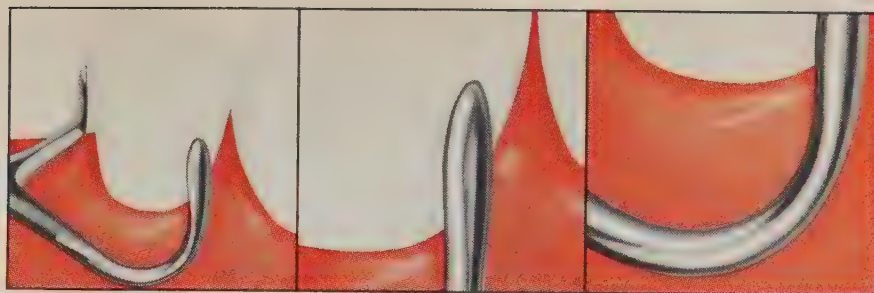
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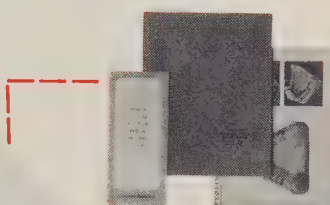
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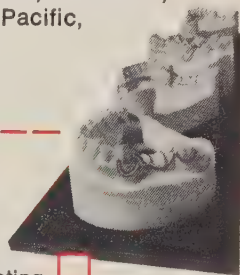
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Clasp Designs for Extension Base Partial Dentures, Lectures presented by A. J. Krol, D.D.S., 22nd Annual Seminar of the Group of Dental Studies, U.S.C. de Mexico, May, 1969.

Removable Partial Denture Design, Outline Syllabus, A. J. Krol, D.D.S., November, 1972, University of the Pacific, School of Dentistry.



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Letters/Courrier

Medico-legal aspects of local anaesthesia

Publication of the paper "The Medico-legal Aspects of Local Anaesthesia" in the CDA Journal (November 1972) was facetious. With one exception, all the references were from the United States and Australia.

Our system of law is different from that of either of these countries; in fact it is different from that of any other country in the world.

I retained a professor from Osgoode Hall, one of this country's foremost law schools, to investigate the number of successful lawsuits in Canada concerning dentists and local anaesthesia. The number is zero.

If you are going to publish anything on the medical-legal aspects of a given subject, I feel you have a responsibility to ensure that the material be related to Canadian experience with Canadian law.

I have a patient who is a missionary just returned from Borneo. He told me of a "dentist" who was beheaded for removing the wrong tooth from the chieftain of a tribe.

Because dentists have been punished in the United States, Australia and Borneo does not mean that Canadian dentists will be likewise punished.

*T. W. McKean, CD, DDS
1333 Sheppard Ave East
Willowdale, Ont*

The significant misapprehension of our legal system which pervades Dr. McKean's letter (in which he denounces the publication of Miss Hutchison's article "Medico-legal Aspects of Local Anaesthesia") as "facetious" merely serves to dramatize the need for articles of this genre.

The inability of a law professor to find a reported case in Canada in which a dentist has been successfully sued for negligence in administering a local

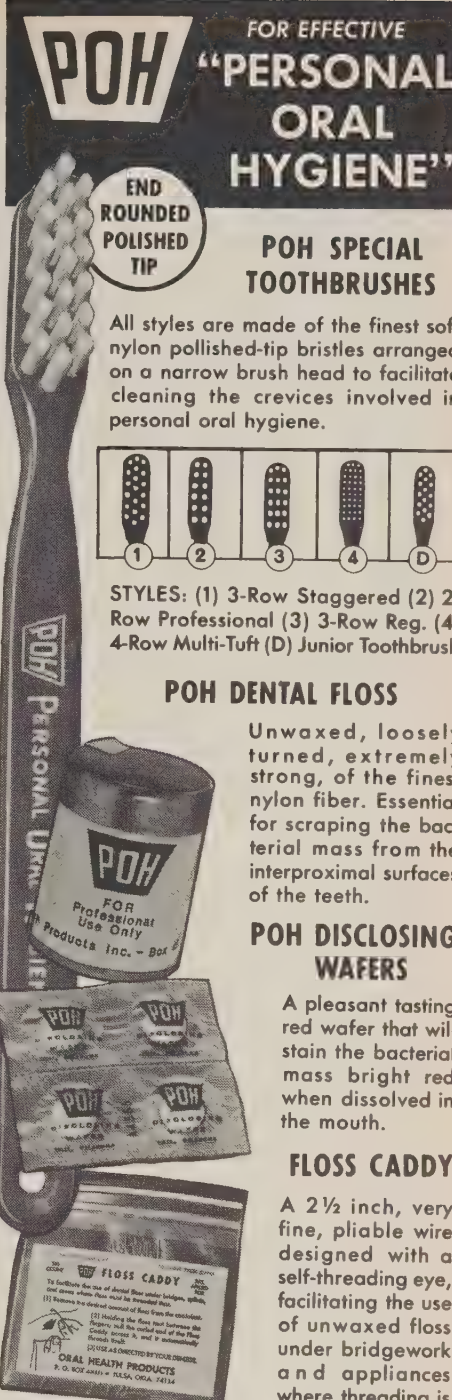
anaesthetic does not lead logically to the conclusion that such an action is not maintainable in Canada. There may well have been cases which were either settled out of court by payment by the dentist or by his insurer of a sum of money, or which resulted in an unreported judgment in favour of the patient. Only a relatively small percentage of decided cases are actually reported and thereby made available to persons conducting legal research. I note with interest that Miss Hutchison did in fact discover a "successful lawsuit" concerning a dentist and local anaesthesia: see reference 5 of her article.

In deciding an issue of tortious liability resulting from the administering of a local anaesthetic, a Canadian court will apply the accepted legal principles of negligence which are accurately summarized in the passage which Miss Hutchison quotes from Fleming's text on the Law of Torts, a highly respected publication by a recognized expert in this field. Dr. McKean would undoubtedly be shocked to discover that this text and other recognized authorities in the area cite cases from England, Canada, Australia, the United States, Ireland, New Zealand and other highly developed common law systems, although references to cases from Borneo do seem to be quite rare. This simply reflects the fact that the "Canadian" law of torts has been built upon a solid foundation of legal principles from other common law jurisdictions which principles have been adopted and developed by Canadian jurists.

Moreover, the prudent Canadian lawyer who is unable to find a case which is on all fours with the case which he seeks to advance or defend will turn to the case law of other common law jurisdictions for assistance. While Canadian judges are not legally bound to follow decisions from other jurisdictions, they have in a number of instances adopted the reasoning of a foreign tribunal where they found it to be compelling and persuasive. Since our jurisprudence has often advanced via cross-fertilization of this nature, Miss Hutchison displayed considerable legal acumen by referring to authorities from other jurisdictions to supplement the dearth of Canadian authority.

While Miss Hutchison does not purport to be a legal scholar, it is obvious

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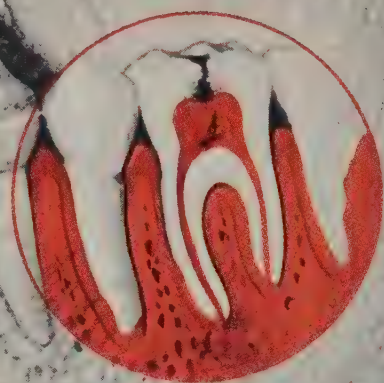
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1. de Vries, J., et al. (1972). J. Canad. Dent. Assn., No. 2, p. 63.



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that she has thoroughly researched her topic in an effort to provide her readers with a basic understanding of the applicable legal principles. It would be unfortunate indeed if the publication of her commendable article should be dismissed as "facetious" by a sceptic who is able to cite by way of rebuttal only the unverified comments of a patient concerning an extra-legal "self help" remedy asserted by a disgruntled Bornean chief with acquaintances prone to vigilantism.

R. D. Howe

Faculty of Law

University of Windsor

Windsor 11, Ont

Endosseous blade implants

The Journal has done a disservice to its readers by publishing the article by Druck and Morgan (February 1973) on endosseous blade implants. Their report of two cases involving the use of blade implants merely relates a commonly reported technique of treatment. Their handling of an experimental clinical procedure without mention of prognosis or criteria for success was, to say the least, casual.

The Journal should concentrate on enlightening the dental profession to the use of endosseous implants by restricting its information to successful cases of at least several years' duration; to cases that have failed (of which the literature contains very few); and to carefully controlled studies of human or animal material (for example Zarb et al, *J Canad Dent Ass*, September 1972). The Journal would have done a better service to the profession by holding off Druck and Morgan's case reports for several years to see how they withstood the test of time.

Recently Natiella et al (*J Amer Dent Ass*, June 1972) extensively reviewed the literature relating to the use of dental implants in the last 20 years. Many questions were raised of long standing controversy that have as yet not been answered. The role of influencing factors on the success of these implants has not yet been defined. Included among these disputed factors are the lack of a true periodontal ligament, the highly vulnerable epithelial attachment, and the galvanic interaction of implants in tissue fluids resulting in toxic products (from sources such as differing metal copings, and

metal particles removed from handling instruments, shoulder set instruments, and carbide burs used for preparing the implant site).

From Natiella et al's literature review the Council on Dental Materials and Devices of the American Dental Association concluded that:

"at this time insufficient information exists regarding the causes for failures as well as the reasons for successes of implants. . . . It cautioned that short lectures or clinical presentations are not sufficient training for the practitioner to attempt implants. . . . A national conference is desirable . . . to define the shortcomings and attributes of implants, to define specific current applications, if possible, of implants in dentistry, to outline areas of needed research, and to encourage submission of well-controlled objective clinical research proposals for evaluations of dental applications of implants."

Until such time as these obstacles can be unqualifyingly overcome, the future of dentistry lies not in the restoration of edentulous areas with implants, but in their prevention.

E. M. Wolfson, DDS

Assistant Professor

Department of Endodontology

Temple University

Philadelphia, Pennsylvania

CDA national conventions

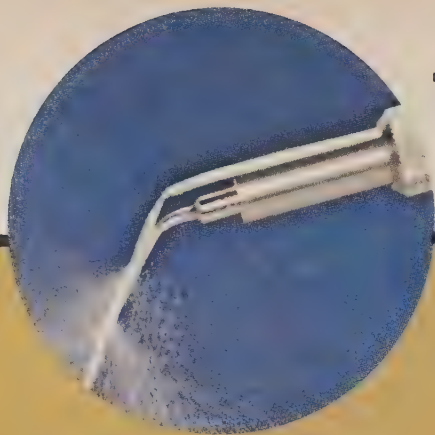
I write seeking the assistance and co-operation of delegates to the 1973 CDA national convention.

For 1973, Air Canada has been designated CDA Official Carrier. Air Canada offered more assistance to the Association and hence to all delegates than any other carriers. If you have not already committed yourself to other travel arrangements, I encourage you to fly Air Canada to Vancouver this October.

Incidentally, the selections the Association makes in terms of air carriers, convention hotels, etc are made to benefit no one but convention delegates. You will soon receive a mailing of convention literature including an Air Canada folder and reservation card. Seats have been blocked off for CDA delegates on various flights. Your support will help.

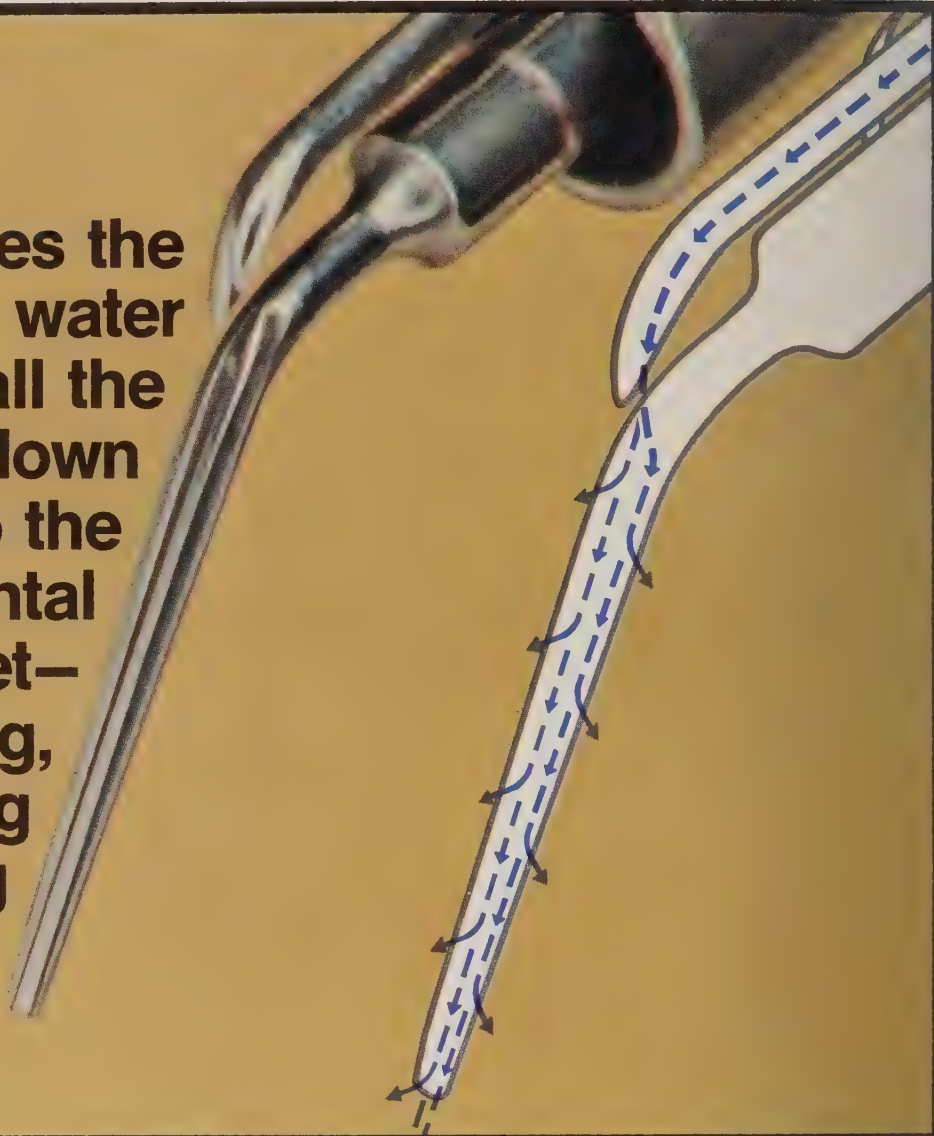
Murray Cornish, DDS

Chairman, CDA National Conventions Committee



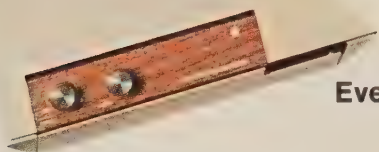
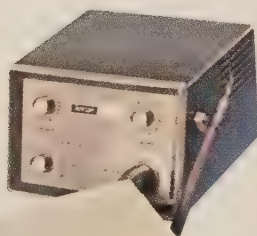
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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

Continuing education as a requirement for licensure

Present tax laws in Canada do not permit the expenses in connection with graduate and post-graduate courses to be treated as tax deductible items, with the exception of tuition fees which, under certain conditions, are tax deductible.

The Canadian Dental Association's brief on the White Paper on Tax Reform complained about this ruling and urged that it be reconsidered. Personal appearances by Association representatives before the Senate and House of Commons committees studying the tax reform proposals and before officials of the Department of Finance have so far been ineffective in bringing about the desired changes.

The Association's stand has always been that, since the public is the eventual benefactor of the professional man's efforts to keep himself up-to-date with new knowledge, it should share in the costs of the continuing educational programs. The government, on the other hand, has taken the stand that the additional knowledge required by the dentist is in the nature of a capital gain and the related costs in its acquisition should not be deductible in determining income for tax purposes.

A new dimension was added to the dialogue between the Association and the government when, in 1968, the dental licensing body in Alberta made the attainment of certain credits acquired by attendance at recognized continuing education programs

mandatory for licence renewal by dental specialists each five year period. Other provincial licensing bodies have agreed in principle to the continuing education requirement for licence renewal but Alberta was the first province to introduce it as a legal requirement.

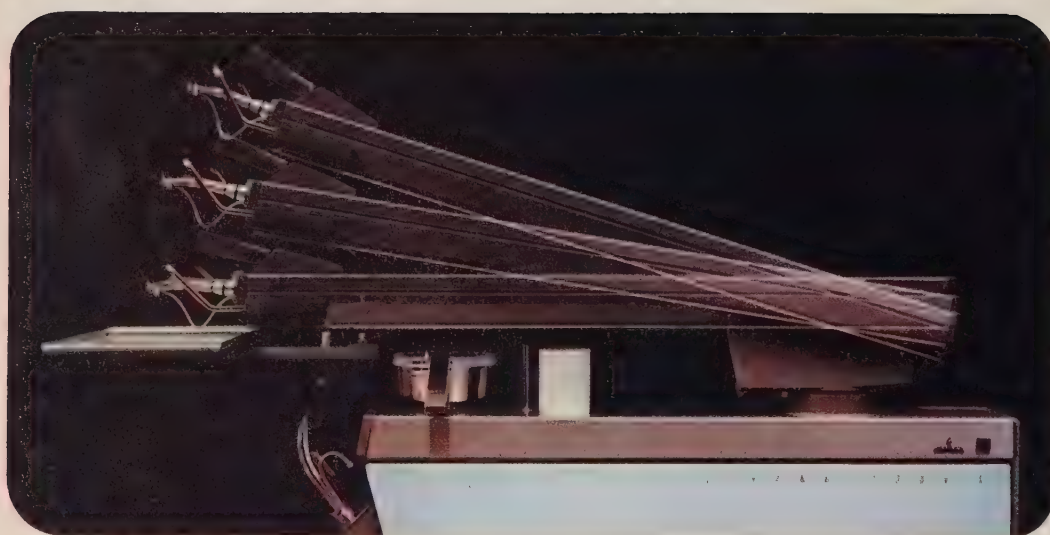
With this new compulsion factor as an additional argument, the Association formally asked the Department of National Revenue for an interpretation of the government's tax ruling as it would apply in the case of a dental specialist who must now participate in continuing education programs in order to maintain his licence to practise. The Department of Revenue said, in effect, that the tax laws as written could only be interpreted as they have been in the past and that an amendment to the Act would be necessary if a change in ruling was to be made.

Accordingly, with the assistance of the Association's solicitor, a formal request has again gone forward to the Honourable J. Turner, Minister of Finance, asking that the Income Tax Act as it pertains to continuing education be reconsidered, particularly in light of the mandatory requirement for specialists in Alberta. Mr. Turner has acknowledged receipt of the brief and has promised that the subject would be reviewed.

In February, 1973, shortly after the brief had been sent to Mr. Turner, the Manitoba Dental Association which is the licensing body in that

(continued on page 337)

Over the patient delivery concept



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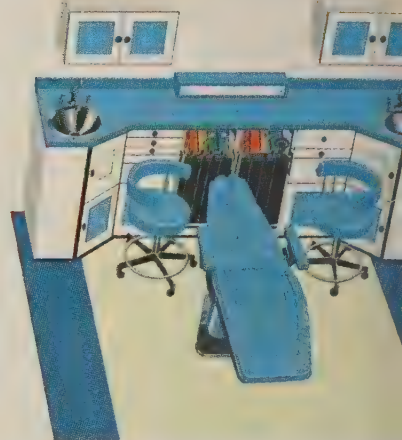
The Dentsply Spectrum
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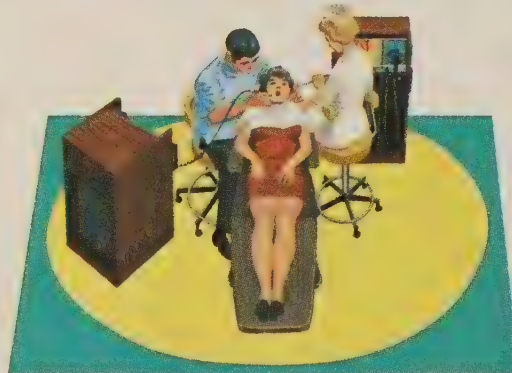
The Dentsply Spectrum "Mini" Console
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Dentistry in the news

The Association

Council on Research issues warning on home denture kits

The Committee on Standards for Dental Materials and Devices, CDA Council on Research, has issued the following statement on home denture repair and relining kits:

"It is apparent that a large number of people are making use of the readily available kits for repair of broken dentures and self-administered relining procedures. These procedures have been shown to be potentially hazardous particularly to the patient. Unfortunately, statements often accompany the advertising and directions for use of these materials which are misleading and untrue. Contrary to the information supplied in these kits about their harmless properties and ease of use, there is adequate documented evidence to prove that this is not the case. Some of these materials have produced adverse effects on the denture-base material by seriously reducing its transverse strength. Most of these materials contain plasticizers and solvents which are capable of producing irritation to the tissues they come in contact with. Severe resorption of underlying bone may result from improper relining procedures performed by the patient.

"There is some justification for the use of such materials under certain circumstances as a temporary measure, until proper professional attention can be obtained. There is need for adequate

control of misleading advertising and labelling of such products with a warning of the potential hazards and limitation for emergency use only until a dentist can be seen."

Canada and the Provinces

Dental care plans soon to be introduced in NS

During a recent session of the Nova Scotia legislature provincial Health Minister Scott McNutt stated that he would soon be presenting governmental plans for dental care for children in the province.

Dental services to be covered by Manitoba's expanded medicare program

The Manitoba government intends to bring in public insurance for hearing aids, eyeglasses, prescription drugs, ambulance service and dental care within the next four years, according to the province's Health and Social Development Minister René Toupin.

During a recent interview with the news media, Mr. Toupin explained that health costs in the province have levelled off during the past year and the government is looking for ways of increasing the availability of total health

care throughout the province rather than just keeping the lid on costs. He said the expansion of medicare to cover these additional services would be well within the province's financial capabilities.

Mr. Toupin also said that the shortage of manpower was the major roadblock preventing the new programs from being implemented much sooner. This is particularly true of the proposed denticare scheme, although Mr. Toupin said the government is implementing programs to train more dentists and dental technicians in order to make dental care available across the province.

The Manitoba program would probably be similar to the one proposed in Saskatchewan, starting with school children and expanding over a period of five years to include the entire population.

International Items

Dr. Hendershot resigns as editor of ADA Journal

Dr. Leland C. Hendershot recently resigned as editor of the *Journal of the American Dental Association*. His resignation was accepted by the ADA Board of Trustees at its March meeting at headquarters in Chicago.

Dr. Hendershot, who has been in poor health since a heart attack in 1968, joined the association's staff in 1959 as assistant secretary of the Council on Dental Therapeutics. In 1962 he was appointed assistant editor of the association and, in 1963, he became editor. During his tenure, the Journal's format was extensively changed and its size increased. He worked for two years to get a bi-weekly newspaper for the profession, and in 1970 the first issue of the *ADA News* appeared. Three other journals published by the ADA were also under his direction.

In February of this year, Dr. Hendershot was reappointed chairman of the Publications Committee of the Fédération Dentaire Internationale.

A prime area of interest for Dr. Hendershot is the field of research. He

For your patients... a complete line of products for daily plaque control.

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We would be pleased to send you a complimentary set of Tek Action oral health products for your examination if you request them on your professional letterhead or enclose your professional card. We think you'll agree it makes good sense to recommend these products to your patients.

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earned his PhD in pharmacology as well as his DDS at the University of Michigan where he was subsequently research assistant and research associate and a lecturer in pharmacology.

Awards and Appointments



K. J. Paynter

Dr. Paynter to head up grants program for Research Council

Dr. K. J. Paynter, dean of the College of Dentistry, University of Saskatchewan, has been appointed director of the grants program for the Medical Research Council in Ottawa. His appointment will become effective July 1, 1973.

A native of Kingston, Ont., Dr. Paynter graduated from the University of Toronto's Faculty of Dentistry in 1944. He was awarded his PhD in anatomy from New York's Columbia University in 1953.

He served in the Canadian Dental Corps for three years following which he opened a private practice in Ottawa. In 1951 he joined the staff of University of Toronto where he served in various capacities until 1967 when he left to head up the new College of Dentistry at the University of Saskatchewan. That same year he was made a fellow of the International College of Dentists.

Dr. Paynter is a former chairman of the Canadian Dental Association's Council on Research and of the National Research Council's Associate Committee on Dental Research. He was president of the Canadian Dental Research Foundation and a member of the Public Health Research Advisory Committee, Dominion Council on Health, Canada.

In Saskatoon Dr. Paynter was chairman of the Advisory Committee on Dental Care for Children in Saskatchewan.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on March 31, 1973:

Guaranteed Fund \$10.092;
Fixed Income Fund \$13.960;
Common Stock Fund \$31.251.

Total assets (market value) of the plan were \$16,505,756.74.

The following portfolio purchases and sales occurred during the preceding month: bought \$270,000 Royal Trust Company GIR, 2,771 units CIF Conventional Mortgage Fund, 10,000 shares Cadillac Development Corp, 14,200 shares Markborough Properties and \$1½ million Royal Bank of Canada note; sold 1,500 shares Dome Mines Ltd.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Research

Accidentally lost teeth should be replanted

Anyone who has a tooth knocked out should try to find it, wrap it in a wet cloth (a weak salt solution is good) and get to a dentist as fast as possible to have it replanted.

This timely reminder comes from Maury Massler, a University of Illinois scientist, who adds that much of the animal research on factors affecting successful replantation has now been confirmed in humans.

For the pulp to survive, the tooth should be kept moist and replanted within about half an hour. The periodontal tissue may survive and re-attach after periods of up to six hours. Dr. Massler points out that young teeth survive better than mature teeth.

"The most valuable treatment consists of a short soak of about five minutes in a 2 per cent solution of sodium fluoride just before replanting," he explained. "This greatly retards loss of root material and increases the chances

that the tooth will serve for years whether the pulp survives or not."

In discussing the replantation procedure, Dr. Massler indicated that applications of tetracycline to the tooth stimulate growth of jaw bone around the tooth so that it becomes rigidly fixed or ankylosed.

However, the bone thus stimulated replaces the flexible periodontal ligament which acts as a natural shock absorber for teeth. When ankylosed in the jaw, teeth cannot withstand changes in pressure and temperature as well as those which are normally attached with elastic periodontal fibres.

Deaths

Bellavance, Joseph M. 49. Rimouski, Qué. Université de Montréal, 1949. 12-3-73.

Dacyshyn, Dennis Wayne. 26. Vancouver. University of Alberta, 1969. 12-3-73. Survived by Mr. and Mrs. John Dacyshyn (parents); Arthur J. (brother); and Mrs. E. Semeniuk (sister).

Hallett, John Edward. 54. Halifax. University of Toronto, 1947. 24-3-73.

Hanna, William Morton. 86. Ladner, BC. University of Oregon, 1912. 6-3-73. Survived by Nellie (wife).

Johnston, Robert Edison. 75. Toronto. Royal College of Dental Surgeons of Ontario, 1921. 18-3-73. Survived by Roberta (wife); Mrs. J. Davis and Mrs. R. Benns (daughters); and Sean, Laura, Leslie and Robert (grandchildren).

Kinzie, Dillman Laverne. 78. Chatham, Ont. Royal College of Dental Surgeons of Ontario, 1917. 10-3-73. Survived by Glynne (wife); David (son); Mrs. Frances Sage and Mrs. R. M. Jones (daughters); James B. and Gilbert M. Boyes (stepsons); and six grandchildren.

Poisson, Léopold. 71. Baie St-Paul, Québec. Université de Montréal, 1925. March 1973.

Singleton, Gerald Merrick. 78. Toronto. Royal College of Dental Surgeons of Ontario, 1917. 10-3-73. Survived by Gertrude E. (wife).

Tanner, Louis Ernest Victor. 88. Vancouver. Royal College of Dental Surgeons of Ontario, 1912. 16-3-73.

Thibault, Marc. 51. Montréal. Université de Montréal, 1948. 22-2-73.

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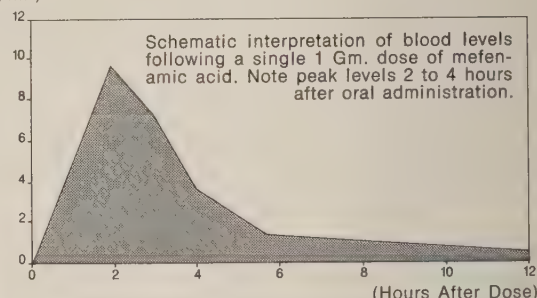
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Single- and multiple-dose studies have shown that mefenamic acid usually reaches peak plasma levels 2 to 4 hours after oral administration. Thus, PONSAN every 6 hours is generally sufficient for relief of mild to moderate pain. The recommended dosage of PONSAN for adults and adolescents over 14 years of age is 500 mg. (2 capsules) initially, followed by 250 mg. (1 capsule) every 6 hours as needed.

Clinical experience has shown that side effects with PONSAN are few and mild at the recommended dosage, but are readily detected and easily controlled when resulting from high dosage or long-term use.

Plasma Levels
(mcg./ml.)



*References available upon request.

Dosage and Administration: Adults and adolescents over 14 years of age — 500 mg. (2 capsules) as an initial dose, followed by 250 mg. (1 capsule) every six hours as needed. The major portion of clinical experience with PONSAN has varied from single doses to 84 days of therapy.

Contraindications: Intestinal ulceration; diarrhea as a result of taking the drug; safe use in pregnancy not established; in children under 14 years of age until pediatric dose has been established.

Precautions: Administer with caution to patients with abnormal renal function, inflammatory diseases of the gastrointestinal tract, or those on anticoagulant therapy.

Discontinue if diarrhea or rash occurs.
Side effects: Mild and infrequent at doses up to 1500 mg. per day; dose-related, being more frequent with higher doses. Most frequently reported: drowsiness, dizziness, nervousness, nausea, diarrhea, G.I. discomfort, vomiting. For detailed information on Precautions and Side Effects see product brochure available on request.

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YOUR SECURITY

The first eight articles on "Your Security" were planned by the Publicity Committee of the CDA Council on Insurance and Investments to let you know what the different areas of responsibility are and what is being offered on your behalf by the CDA. Some of the articles were written with the aid of a public relations firm interviewing the different carriers and administrative bodies. Unfortunately one of the articles on the Retirement Savings Plan seemed to have projected figures that appear to be over and above the long range performance of the common stock fund. This fact was pointed out in letters to the editor and consequently the council asked Royal Trust to give us an explanation. Again, unfortunately, the man interviewed for the article had been transferred to another province and there was considerable delay in getting an answer. However the new representative of the Royal Trust to our fund has written a letter that very aptly puts the matter into perspective. The points of the letter are as follows:

"Please accept my apologies for the unavoidable delay in replying to your inquiry.

On reviewing the article in question, I would agree that the statements contained therein are somewhat misleading.

You will appreciate that this article was prepared by a third party and to date I have been unable to confirm whether the article was ever submitted to us for approval prior to its publication in the Journal. In this regard, I am aware that our Mr. Maier met with the author of the article to provide him with information on your retirement plan but understand the pension income projections were done independently by the author.

Obviously, any pension projection must be based on a number of assumptions, namely:

1. Regular and a fixed rate of \$ contribution;
2. An assumed annual compound rate of growth;
3. Current immediate annual rates.

In regard to assumptions 1 and 2, it is at best an academic exercise as to the capital sum that would be accumulated at age 65. Normally, in calculating such projections, past performance is taken into consideration when assuming the annual rate of growth for the future. The average annual compound rate of growth under the CDARSP common stock fund over the last 10 years measured to November 30, 1972, was 7.6 per cent including capital growth and income. The 11 per cent annual rate of growth assumed by the author overstates

considerably the actual annual rate of growth realized by the fund. On the other hand, depending on the time period selected to measure the performance of the fund, there would be times when the short term performance of the fund would equal or exceed the author's assumed rate of growth.

Again, the general practice when illustrating pension projections, as mentioned, is to use either the actual rate of growth realized by the fund or employ several rates of interest, i.e., 7 per cent, 8 per cent, 9 per cent, etc, all designed to point out the impact and importance investment return bears on the level of capital accumulated and the pension income that would be available at retirement.

In regard to assumption three future pension projections are based on annuity rates offered by the life insurance industry today. Such rates are not fixed and will fluctuate upward or downward. The more likely probability is that annuity rates will increase in direct relationship to improvements in mortality and life expectancy projections. Further, any pension income projection should specify the type of pension the projection is based on as there is a variety of options available to the retiring members. Furthermore, the cost will vary depending on the option selected. For example, a retiring member at retirement may elect (to illustrate some of the options) to have his pension payable on any of the following:

(a) payable for life only — no guarantee — least expensive;

(b) payable for life — 5 year guarantee — more expensive;

(c) payable for life — 10 year guarantee — more expensive;

(d) payable for life — 15 year guarantee — more expensive;

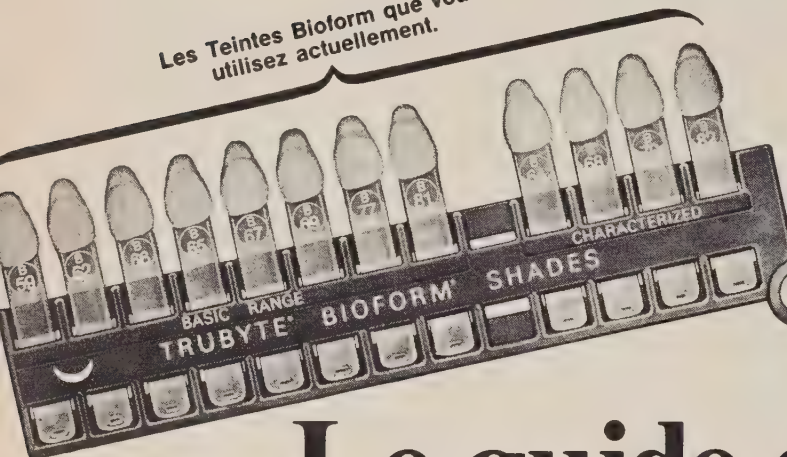
(e) payable for life — joint and last survivor (with or without guarantee).

In summary, the 10 year annual compound rate of return realized on the fixed income fund measured to November 30th, 1972 was 5.5 per cent. In terms of totals, approximately 75 per cent of the fund is invested in the common stock fund and the remaining 25 per cent in fixed income. Applying these ratios as representing the average contributor's allocation, the 10 year average weighted annual compound rate of return, measured to November 30th, would be 6.08 per cent."

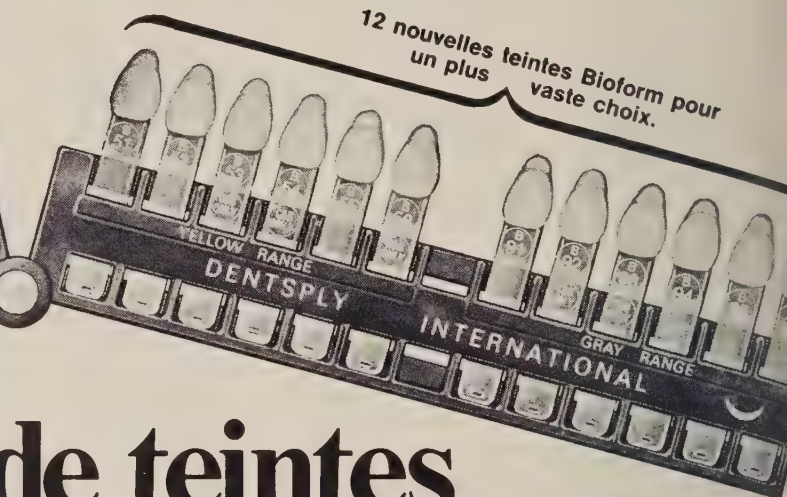
Since there seems to be confusion regarding what is to be expected from the different types of retirement funds there will be articles in the future that will try to give the average dentist a little more guidance in this respect.

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Le Congrès national

Programme scientifique des dentistes francophones

Le docteur Claude Chicoine, président adjoint du programme scientifique du Congrès national de Vancouver, annonce que les docteurs Pierre Désautels et Jacques Fiset, participeront activement aux assises scientifiques.

Le docteur Désautels, professeur en matériaux dentaires à l'Université de Montréal, est membre de l'International Association For Dental Research et du Comité consultatif du "Conseil canadien des normes". Le docteur Désautels contribue aussi aux travaux portant sur les spécifications de matériaux dentaires pour le compte de l'Association dentaire canadienne.

Docteur en chirurgie dentaire (DDS) de l'Université de Montréal, le docteur Désautels a poursuivi ses études postdoctorales à l'Université Purdue (Indiana), où il s'est spécialisé dans le domaine de l'application des matériaux à la pratique dentaire. Il traitera de "l'évaluation clinique d'une technique de restauration d'une fracture incisive après 14 mois". Il présentera son sujet en français et en anglais au cours de deux sessions distinctes.

Le docteur Jacques Fiset, directeur de la Section de prothèse partielle amovible à la Faculté de chirurgie dentaire de l'Université de Montréal et ancien président de l'Académie canadienne de prosthodontie, présentera une clinique intitulée: "Quelques idées nouvelles pour sauver quelques dernières dents extrêmement faibles".

En plus de porter sur le traitement des cas extrêmes des dents habituellement vouées à l'avulsion, la communication du docteur Fiset traitera aussi de la classification des cas impliqués. Il établira du même coup une comparai-

son entre le "stud attachement" et le "bar attachement", tout en évaluant leurs particularités. De plus, l'application de chaque dispositif d'attachement sera démontré à la lumière des principes fondamentaux de la prothèse partielle amovible. Les attachements du type "internal clip" et "ceka" feront l'objet d'une attention particulière.

Ce programme scientifique sera complété par des cliniques de table variées et réparties à des intervalles appropriées pour permettre aux dentistes d'y assister et d'y participer aisément.

Les renseignements pertinents et l'horaire des cliniques seront publiés dans les prochains bulletins du Congrès.

Un comité spécial assume la responsabilité de l'organisation du programme féminin. Ce dernier comporte des divertissements et des activités sociales qui ne manqueront pas d'inciter les membres à se joindre à leurs épouses.

Le Canada

Un comité pour faciliter l'accès aux services d'urgence partout au Québec

Un système d'accès rapide aux services d'urgence sera implanté dans toutes les régions du Québec au cours de la prochaine année. La région de Montréal a été désignée comme région projet et déjà, suite aux rencontres entre des représentants du ministère des Affaires sociales et de la Communauté urbaine de Montréal, on peut prévoir qu'un système intégré d'urgence-santé fonctionnera dans la métropole au cours des prochains mois.

Pour tout malade ou blessé qui doit être conduit rapidement dans un centre hospitalier, un numéro de téléphone unique pourra éventuellement être si-

gnalé dans chaque région. Une centrale de communications dépêcherait immédiatement une ambulance et, après avoir pris connaissance de l'état du patient, l'ambulancier saurait vers quel centre hospitalier diriger le malade et pourrait prévenir le service d'urgence de cet hôpital par contact radio.

Ce schéma ne peut évidemment pas être appliqué immédiatement puisqu'il faudra faire face à des contraintes techniques qui varient avec les régions. Mais il importe d'assurer dès maintenant la coordination des divers éléments du système pour atteindre cet objectif dans les meilleurs délais.

Pour implanter ce système dans les 11 régions administratives du Québec, le ministère des Affaires sociales propose que chaque conseil régional de la santé et des services sociaux mette sur pied un comité de travail qui pourrait faire rapidement une étude de la situation actuelle et des ressources existantes ainsi que des propositions concrètes pour la coordination totale des trois éléments du système dans chaque région: communication, services ambulanciers et cliniques d'urgence. De plus, ce comité régional serait chargé de la mise en place, de la mise à jour et du contrôle du système régional de services d'urgence.

Chaque région pourrait ainsi adapter les dispositions générales à son territoire.

L'implantation des conseils régionaux de la santé et des services sociaux est terminée

L'implantation des conseils régionaux de la santé et des services sociaux dans les 11 régions administratives du Québec est terminée.

L'opération qui avait débuté en juillet dernier visait à créer, dans chaque région, un organisme qui aurait comme fonction d'adapter les services de santé et les services sociaux aux besoins de la population et de les répartir d'une manière plus juste et plus rationnelle à l'intérieur du territoire.

De plus, les conseils régionaux seront appelés à conseiller et assister les établissements dans l'élaboration de leur programme de développement, à réglementer et surveiller l'élection des membres des conseils d'administration des établissements, à valider les contrats de services entre des établissements et



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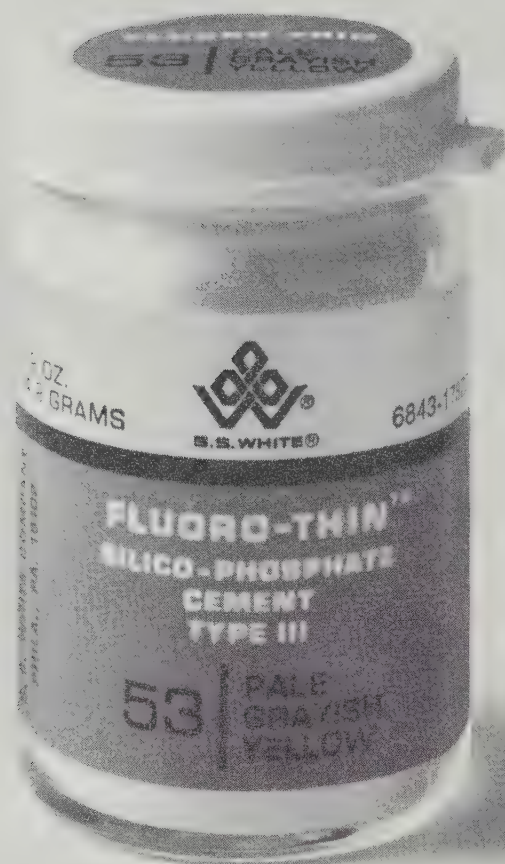
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à assurer des liens entre le public, les établissements et le ministère. Enfin, ces organismes devront susciter la participation du milieu et recevoir les plaintes de la population pour les faire connaître aux établissements ainsi qu'au ministère.

Chaque conseil est formé de 21 membres représentatifs de différents milieux de la région tels les universités, les Cegeps, et les établissements de santé et de services sociaux.

Voici la liste des directeurs généraux des conseils de chacune des régions:

Directeurs généraux

1. Région du Bas St-Laurent et de la Gaspésie
Jean-Claude Gagné
244 rue de la Cathédrale
Rimouski
2. Région du Saguenay – Lac St-Jean
Gilles Dufault
363 Mélançon
Jonquière
Tél: 547-0512 ou 547-2614
3. Région de Québec
Gérard Douville
1180 Chemin Ste-Foy
Québec
Tél: 688-1816
4. Région de Trois-Rivières
Pierre Duguay
533 Bonaventure
CP 759
Trois-Rivières
Tél: 376-3737
5. Région des Cantons-de-l'Est
Albert Painchaud
525 nord, Boul. Queen
CP 850
Sherbrooke
Tél: 659-5174
6. Région de Montréal Métropolitain
Gilles Gaudreault
65 est, Sherbrooke
Ch 210
Montréal
Tél: 288-5201
7. Région des Laurentides – Lanaudière
Robert Lavoie
236 du Palais
St-Jérôme
Tél: 438-4122
8. Région sud de Montréal
André Cormier
201 Place Charles Lemoyne
3e étage
Longueuil
Tél: 873-4314 ou 873-4315
9. Région de l'Outaouais
Jean-Bernard Guindon
675 Boul St-Joseph
1er étage
Hull
Tél: 770-7747
10. Région du Nord-Ouest
Pierre Roberge
139 est, rue Perreault
CP 1054
Rouyn
Tél: 762-4358
11. Région de la Côte-Nord
Claude Boisjoli
CP 457
Hauterive
Comté Saguenay
Tél: 589-5595

Programme de soins dentaires pour les enfants proposé à la Saskatchewan

Le ministère de la Santé publique de la Saskatchewan a soumis récemment un rapport au gouvernement provincial proposant la mise en oeuvre dans toute la province d'un programme dentaire pour les enfants.

En fait, le rapport demande que tous les enfants de la province âgés de trois à 12 ans bénéficient des services dentaires. Ces services comprennent l'application de mesures préventives telles que le nettoyage, le détartrage, l'application de fluorures ainsi que les restaurations et les extractions nécessaires. L'enseignement des méthodes préventives font aussi partie du programme.

La plupart des services seront fournis par des infirmières dentaires du type de celles de la Nouvelle-Zélande et par des assistantes dentistes opérant sous la "surveillance fonctionnelle" du dentiste. Les propositions du rapport concernant la "surveillance fonctionnelle" précisent que le consultant dentaire régional devra passer une demie ou une journée par semaine à chaque clinique. C'est-à-dire qu'en moyenne, le dentiste aurait l'obligation de surveiller neuf infirmières dentaires et 21 assistantes dentaires autorisées dans chaque clinique, ou une infirmière dentaire et deux ou trois assistantes dans chaque centre de distribution de soins. Toutefois, quelle que soit la mesure choisie, le dentiste, comme responsable de la qualité des soins dispensés, devra aussi répondre de plusieurs mil-

liers d'enfants, tout en ne pouvant voir que le neuvième de ce nombre, durant la durée de leur traitement ou au cours de visites de rappel.

D'après les renseignements contenus dans le rapport, un consultant dentaire régional serait responsable d'environ 3,300 enfants à l'inauguration du programme en 1974. Au cours des cinq années suivantes, divers groupes d'âges seront intégrés successivement jusqu'à ce que tous les enfants de trois à 12 ans bénéficient du plan de soins dentaires. Vers 1978, un total de 140,000 enfants y participeront et chaque consultant régional deviendra responsable d'environ 11,600 enfants.

En plus de fournir une "supervision fonctionnelle", les dentistes devront régler les problèmes plus complexes qui leur seront soumis par les infirmières et les assistantes.

La proposition relative à un programme dentaire pour les enfants de la Saskatchewan sera étudiée par un comité consultatif sur les soins dentaires aux enfants composé de sept membres et formé par Monsieur Walter E. Smith, ministre provincial de la Santé publique. Deux dentistes sont membres du comité: les docteurs K. J. Paynter, doyen de l'Ecole dentaire de la Saskatchewan, en qualité de président, et A.W. Geisthardt de Regina, vice-président.

Le comité consultatif a invité tous les groupements et les individus intéressés du Canada à étudier le plan proposé pour doter la province d'un programme de soins dentaires pour les enfants et de lui soumettre des mémoires. De son côté, l'Association dentaire canadienne a soumis un mémoire exposant un aperçu général de ses vues sur la question et le docteur W. G. McIntosh, directeur général de l'ADC ainsi que le docteur F. T. Wihak de Regina ont comparu devant le comité consultatif ministériel, le 21 février, afin d'appuyer les commentaires exprimés dans le mémoire de l'Association.

La Loi des techniciens dentaires en vigueur au Manitoba

La législation prévoyant l'autorisation et le contrôle de l'activité des techniciens dentaires ainsi que les normes de l'exercice de leur profession est entrée

en vigueur le 1^{er} novembre au Manitoba.

En annonçant que le cabinet approuvait la Loi des techniciens dentaires, Monsieur René Toupin, ministre de la Santé et du Développement social du Manitoba, souligna que cette loi avait déjà été acceptée par l'Assemblée législative en août 1970. Toutefois, expliqua-t-il, la proclamation officielle fut subordonnée à l'approbation générale des dentistes et des techniciens dentaires de règlements "permettant l'application efficace de la loi et prévenant le plus grand nombre de conflits possibles à l'occasion de la mise en vigueur d'une loi qui a provoqué des discussions enflammées et des manifestations d'hostilité dans la province depuis plusieurs années."

La loi défend aux techniciens dentaires toute intervention aux endroits spécifiques où des dents vivantes sont présentes. Cette restriction leur interdit ainsi d'installer des prothèses partielles. Elle leur interdit de plus de s'attribuer le titre de "denturiste" pour définir leur pratique.

Toute personne désirant retenir les services d'un technicien dentaire doit subir au préalable un examen buccal complet chez le dentiste. Quand cette personne est totalement édentée, le dentiste remplit un certificat de santé buccale indiquant toute anomalie visible et spécifiant que le patient a accepté ou non de se soumettre à un examen radiographique. Ce certificat est signé en trois copies par le patient et le dentiste afin que ces derniers ainsi que le technicien dentaire détiennent chacun leur copie.

Les patients qui présentent un maxillaire édenté et désirent que le technicien confectionne un dentier complet en occlusion avec les dents naturelles de l'arc opposé doivent obtenir, au préalable, une ordonnance "prosthétique" du dentiste. Cette ordonnance doit indiquer les traitements de restauration, de périodontie et de chirurgie que requiert le patient avant la confection de la prothèse. En réalité, toutefois, l'ordonnance ne constitue qu'une spécification pour le patient et le travail indiqué ne doit pas être nécessairement effectué avant la visite au technicien dentaire.

Les règlements prévoient la formation d'un comité de six membres, deux membres représentant le ministère de la Santé et du Développement social, deux la Faculté de dentisterie de

VOTRE SÉCURITÉ

Le plan des huit premiers articles sur "Votre sécurité" fut arrêté par le Comité de publicité du Conseil des assurances et placements de l'ADC afin de faire mieux comprendre les divers domaines de vos responsabilités et de la protection qui vous est disponible par l'entremise de l'ADC. Certains articles furent rédigés avec la collaboration d'une agence de relations publiques, à la suite d'entrevues avec divers porteurs et organes administratifs.

Malheureusement, l'un des articles portant sur le fonds d'épargne-retraite semble avoir établi des projections qui dépassent, à long terme, les valeurs de rentabilité du fonds commun. Le fait a été souligné dans plusieurs lettres adressées à la rédaction. Conséquemment, le Conseil a réclamé des explications auprès du Trust Royal. Il arriva malencontreusement que la personne interviewée à l'origine ait été mutée dans une autre province et la réponse se fit longtemps attendre. Toutefois, le nouveau représentant du Trust Royal à notre fonds nous adresse une lettre qui remet les choses dans leurs perspectives propres. En voici les principaux points:

"Veuillez accepter mes excuses pour le retard à répondre à votre demande de renseignements.

Après avoir révisé l'article en question, je dois admettre que les déclarations qu'il contient prêtent quelque peu à confusion.

Il faudrait tenir compte que cet article a été préparé par une tierce personne et, à ce jour, il m'a été impossible de confirmer que le texte a été soumis à notre contrôle avant sa publication dans le Journal. A ce sujet, je sais que Monsieur Maier, de notre maison, a rencontré l'auteur de l'article afin de lui fournir les renseignements nécessaires concernant votre régime de retraite, mais aussi que les

l'Université du Manitoba et deux techniciens détenant leur droit d'exercer en vertu de la loi. Le comité devra aussi accorder audience à tous les cas d'interdiction ou de suspension du droit d'exercer.

La loi établit aussi des restrictions sévères sur la publicité. Les techniciens dentaires ne sont pas autorisés à annon-

cer le prix ou la nature de leurs services sauf pour faire connaître que les services sont ceux d'un technicien dentaire détenant son droit d'exercer ou par un laboratoire dirigé par un technicien dentaire autorisé. La publicité dans les journaux est limitée à trois insertions de la carte d'affaires annonçant soit un changement d'adresse ou de personnel, soit l'ouverture ou la fermeture d'une

projections relatives à la pension qui vous intéresse sont une contribution indépendante de l'auteur.

Il est évident que toute projection relative à une pension doit reposer sur un certain nombre de postulats:

1. un taux fixe régulier de contribution en dollars;
2. un taux composé de croissance considéré comme probable;
3. les taux annuels courants.

Concernant les postulats 1 et 2, il semble conforme à la tradition de considérer le capital éventuellement accumulé à l'âge de 65 ans. Normalement pour établir de telles projections, il est tenu compte du rendement obtenu dans le passé avant d'établir le taux annuel de croissance pour l'avenir. Le taux moyen de croissance, par année, du fonds commun du plan d'épargne-retraite de l'ADC depuis 10 ans, au 30 novembre 1972, s'établissait à 7.6 pour cent, y compris l'accroissement du capital et du revenu. Le taux annuel de croissance établi par l'auteur à 11 pour cent dépasse considérablement le taux annuel de croissance réel de rendement du fonds. En revanche, tenant compte de la période choisie pour établir le rendement du fonds, il est possible que certaines périodes de rendement du fonds à court terme fournissent un rendement égal ou plus considérable que le taux d'accroissement supposé par l'auteur.

De plus, comme nous l'avons mentionné, la pratique générale adoptée pour illustrer les projections concernant les pensions, consiste, soit à appliquer le taux réel de croissance réalisé par le fonds, soit à utiliser divers taux d'intérêts, i.e. 7, 8, ou 9 pour cent etc, afin de mettre en évidence l'impact et l'importance que les bénéfices déclarés exercent sur le niveau du capital accumulé et le montant de la pension disponible à l'âge de la retraite.

Considérant le troisième postulat, les projections futures concernant la pension sont basées sur les taux des rentes offertes actuellement par l'industrie

de l'assurance-vie. Ces taux ne sont pas fixes et pourront présenter des fluctuations en hausse ou en baisse. L'éventualité la plus probable laisse prévoir que le taux des rentes augmentera directement avec l'amélioration démontrée dans les projections des taux de mortalité et de la durée probable de la vie. De plus, toute projection concernant le montant des pensions devrait spécifier sur quel type de pension elle se base, étant donné qu'il existe diverses options disponibles au membre qui prend sa retraite. Ajoutons que le coût variera avec le choix de l'option. A titre d'exemple, un membre qui prend sa retraite peut choisir (pour illustrer quelques options) de recevoir sa pension selon l'une des modalités suivantes:

- (a) payable à vie seulement — aucune garantie — la moins chère;
- (b) payable à vie — garantie de 5 ans — plus chère;
- (c) payable à vie — garantie de 10 ans — plus chère;
- (d) payable à vie — garantie de 15 ans — plus chère;
- (e) payable à vie — conjoint ou dernier survivant (avec ou sans garantie).

En résumé, le taux composé annuel déclaré et réalisé depuis 10 ans, sur le fonds des revenus fixes, au 30 novembre 1972, s'établit à 5.5 pour cent. Au total approximativement 75 pour cent du fonds est investi dans le fonds commun et le 25 pour cent qui reste dans le revenu fixe. L'application de ces taux, représentant l'allocation moyenne des participants, établirait alors le taux composé annuel déclaré réalisé depuis 10 ans, au 30 novembre, à 6.08 pour cent."

Etant donné que les revenus éventuels des divers types de caisses retraites semblent prêter à confusion, nous publierons des articles qui auront pour objectif d'apporter une orientation plus claire sur ces questions.

clinique. L'annonce dans l'annuaire du téléphone doit adopter la forme ordinaire apparaissant habituellement dans les pages blanches et les pages jaunes. L'étalage publicitaire est strictement interdit.

A partir du premier novembre, des autorisations provisoires sont accordées aux candidats qui résident dans la

province depuis un an et qui ont exercé en qualité de technicien dentaire depuis au moins trois années consécutives, dont la dernière au Manitoba. Les candidats résidant à l'extérieur de la province doivent avoir exercé au moins cinq années consécutives et détenir une scolarité équivalente à la 11^e année. Tous les candidats doivent solliciter l'autorisation d'exercer durant

les trois mois suivant l'entrée en vigueur de la loi.

Les techniciens dentaires reçoivent l'autorisation de la province d'exercer moyennant le versement d'un droit de \$100 annuellement. Des inspecteurs du gouvernement sont nommés pour veiller à l'application et à l'administration des dispositions de la loi.



INDICATIONS: Carbocaine (brand of mepivacaine) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS: Carbocaine is contraindicated in patients with a known hypersensitivity to the amide type local anesthetics or to methylparaben which is added to the multiple dose vial solutions.

WARNINGS: RESUSCITATIVE EQUIPMENT AND DRUGS SHOULD BE IMMEDIATELY AVAILABLE WHEN ANY LOCAL ANESTHETIC IS USED.

Usage in Pregnancy: Safe use of Carbocaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

Solutions containing a vasoconstrictor, particularly epinephrine or norepinephrine, should be used with extreme caution in patients receiving antidepressants of the triptyline or imipramine types or MAO inhibitors

because a severe prolonged hypertension may occur.

PRECAUTIONS: The safety and effectiveness of Carbocaine depend upon proper dosage, correct technique, adequate precautions, and readiness for emergencies.

The lowest dose that results in effective anesthesia should be used to avoid high plasma levels and serious undesirable systemic side effects. Injection of repeated doses of Carbocaine may cause significant increases in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slow metabolic degradation.

Tolerance varies with the status of the patient. Debilitated, elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their age and physical status.

Solutions containing a vasoconstrictor should be used cautiously in the presence of diseases which may adversely affect the patient's cardiovascular system. In persons

with known drug sensitivities or allergies Carbocaine should be used cautiously.

Serious cardiac arrhythmias may occur if preparations containing a vasoconstrictor are employed in patients receiving or following the administration of chloroform, halothane, cyclopropane, trichloroethylene, or other related agents.

ADVERSE REACTIONS: Adverse reactions result from high plasma levels due to excessive dosage, rapid absorption, or inadvertent intravascular injection. Hypersensitivity, idiosyncrasy, or diminished tolerance may also be the cause of reactions. Reactions due to overdosage (high plasma levels) are systemic and involve the central nervous system and the cardiovascular system.

Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may be followed by drowsiness, convulsions, unconsciousness, and possibly respiratory arrest.

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2. The modern local anesthetic solution—Carbocaine 3%—provides unsurpassed anesthesia that allows ample time for routine procedures, an average of 20 minutes *operating* anesthesia in the upper jaw and 40 minutes in the lower, but doesn't linger a great deal longer than necessary.

Carbocaine 3% adds this important dimension to patient comfort because it is fully effective by itself, without any help from a vasoconstrictor.

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brand of **mepivacaine** HCl
without vasoconstrictor

**The modern local anesthetic
adequately effective by itself**

Reactions involving the cardiovascular system include depression of the myocardium, hypotension, bradycardia, and even cardiac arrest. Treatment of a patient with toxic manifestations consists of maintaining an airway and supporting ventilation using oxygen, and assisted, or controlled respiration as required. Supportive therapy of the cardiovascular system consists of using vasopressors, preferably epinephrine. Convulsions may be controlled by the use of oxygen. If convulsions persist, the intravenous administration in small increments of an ultra short-acting barbiturate (i.e., thiopental, thiamylal) may be used. If these are not available, a short-acting barbiturate (secobarbital, methohexital) may be used. Intravenous barbiturates should only be used by those familiar with their use. Allergic reactions are characterized by cutaneous manifestations of delayed onset, or urticaria, edema, and other manifestations of allergy. The detection of sensitivity by skin testing is of doubtful value.

DOSAGE AND ADMINISTRATION: As with all local anesthetics the dose varies and depends upon the area to be anesthetized, vascularity of the tissues, individual tolerance and the technique of anesthesia. The lowest dose needed to provide effective anesthesia should be administered. For specific techniques and procedures refer to standard dental manuals and textbooks.

For infiltration and block injections in the upper or lower jaw the average dose of 1 cartridge will usually suffice. Each cartridge contains 1.8 ml. (36 mg. of 2% or 54 mg. of 3%). This dose may be doubled if necessary to effect anesthesia. The maximum dose should not exceed 3.6 mg. per pound of body weight.

Any unused portion of a cartridge should be discarded.
HOW SUPPLIED: Carbocaine (brand of mepivacaine) HCl 3% without vasoconstrictor—each ml. contains: Carbocaine HCl, 30.0 mg.; sodium chloride 3.0 mg.; and water for injection. Methylparaben 1.0 mg. is added to the

solution and pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

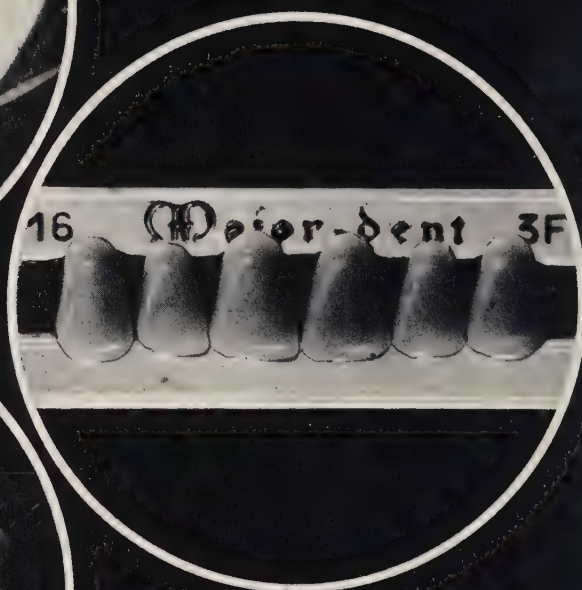
Carbocaine HCl 2% with Neo-Cobefrin (brand of levonordefrin) 1:20,000—each ml. contains: Carbocaine HCl 20.0 mg.; Neo-Cobefrin, 0.05 mg.; sodium chloride 4.0 mg.; acetone sodium bisulfite, not more than 2.0 mg.; and water for injection. Methylparaben 1.0 mg. and sodium lactate 1.0 mg. are added to the solution and the pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Both formulas are available in 1.8 ml. cartridges, cans of 50, to fit the Carpule* Aspirator; and in 50 ml. multiple dose vials.

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Report on the fourth annual Canadian Dental Students' Conference

Associateships in dental practice; summer employment for dental students; admission policies for dental schools; dental economics and the new graduate — these are but a few of the topics which came under discussion during the fourth annual Canadian Dental Students' Conference held in Vancouver, October 18 to 21.

The College of Dental Surgeons of British Columbia and the University of British Columbia's Faculty of Dentistry hosted this 1972 meeting which was sponsored by the Canadian Dental Association's Council on Education and funded by the Canadian Fund for Dental Education.

Kevin L. Roach of the University of Toronto served as conference chairman.

Representatives from each Canadian dental school — with the exception of Laval University which only enrolled its first class in dentistry in September, 1971 — attended the conference. The delegates were: Robert McGinn, University of British Columbia; Bruce Robertson, University of Alberta; Hans Baumann, University of Saskatchewan; Paul Duprat, University of Manitoba; Bob Brandon, University of Western Ontario; George Pakozdi, University of Toronto; Claude Leprohon, University of Montreal; Richard Wang, McGill University; and Wayne Maillet, Dalhousie University.

The three days of intensive enthusiastic discussion which marked CDSC 4 culminated several months of preparation on the part of all delegates before their arrival in Vancouver. Initial planning for the conference got underway in the spring of 1972 when Kevin Roach contacted each delegate and informed him of the proposed topics for discussion, requesting that he research each particular subject as it applied to his area of the country. That each representative did homework — and did it well — was made obvious by the consistently high quality



Delegates to the fourth annual Canadian Dental Students' Conference included Claude Leprohon (left) of the University of Montreal and Kevin Roach, University of Toronto. Mr. Roach was conference chairman for this 1972 session.

of the business sessions during the entire three days. No doubt this comprehensive groundwork was a major factor in ensuring that CDSC 4 was the success it was.

In his report on the third annual students' conference held in Winnipeg in October, 1971, Kevin Roach outlined a number of the recommendations made and noted that attempts to implement these during the past year had met with limited success.

CDA student membership program

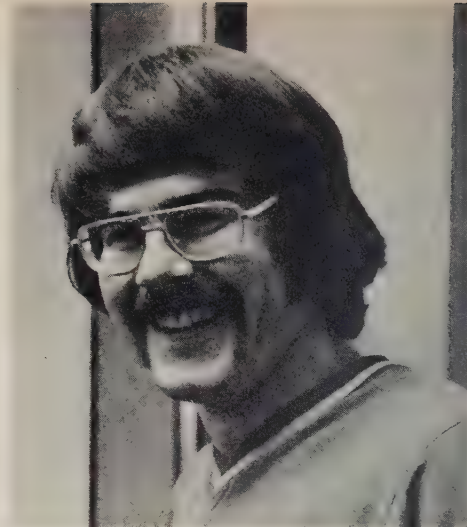
Dr. David J. Kenny, chairman of the CDA Student Membership Committee, presented a brief history of the CDA Council on Education's Student Membership Committee and its role in the annual conference for students. The three man committee



Richard Wang, McGill University



Robert McGinn,
University of British Columbia



Bruce Robertson, University of Alberta

consists of Dr. Kenny, Dr. Peter Currie of London, Ont, and the current CDSC chairman.

Dr. Kenny reported on the proceedings of a joint CDA/ADA meeting held in Toronto. He pointed out that ADA student membership presently stood at 81 per cent of the dental student population, noting that this high figure was mainly due to the fact that many American schools make membership compulsory. Canadian student membership figures, now at an all time high, now stand at 47.8 per cent with the University of Toronto leading the way with membership total of 75 per cent.

Delegates expressed confidence that student membership could be increased to a national level of 50 per cent or better in the coming year. They discussed the possibility of a four year membership for \$20, as well as compulsory membership, but it was pointed out that with membership in the CDA becoming voluntary in the future a voluntary membership at the student level would be more appropriate.

Two resolutions resulted from this discussion on CDA student membership and methods to increase it. The first calls for the CDA Council on Education to provide student membership promotional materials, including complimentary copies of the Journal, which carries the report on the students conference, to the student representatives not later than mid-August annually. This deadline will ensure the material will be available for recruitment efforts in the fall term.

The second resolution requests that the CDA Office of Student Affairs provide lists of active student members as of November 1 annually to the respective student representatives. This would serve to keep the representatives up-to-date on the number of non-enrolled students and would help direct their recruitment efforts during the year.

Dental students in society

The dental student in society and summer employment for dental students proved to be popular and stimulating topics for discussion among the delegates. The session dealing with these subjects was opened by George Pakozdi who was treasurer for an opportunities for youth project at the University of Toronto during the summer of 1972. This project involving U of T students was financed by the federal government and backed by the university's Faculty of Dentistry. It provided dental treatment for the marginally poor in Toronto's mid-city area. Other delegates described similar projects in their own provinces, noting that in some instances student clinics were set up in the facilities at the dental school, facilities which go largely unused during the summer recess.

It was suggested that delegates correspond with each other regarding summer clinics for the purpose of keeping informed on sources of financing, grant applications and other relative information to make this aspect of student education and summer employment viable.

Following this discussion the delegates drafted a resolution that it be recommended to the Council on Education that approval in principle be given to the concept of the use of dental school clinics during the summer months by supervised dental students who have obtained funding for the provision of dental services to the marginal income groups, and that dental school administrations be encouraged to provide such facilities for this purpose.

Summer employment in private practice

Claude Leprohon presented the delegates with the results of a survey conducted by last year's representative from the University of Montreal,

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Left to right: Paul Duprat, University of Manitoba; Wayne Maillet, Dalhousie University; and George Pakozdi, University of Toronto.



Hans Baumann, University of Saskatchewan, and Bob Brandon, University of Western Ontario.

Hubert Gaucher. This survey showed that a large percentage of third and fourth year undergraduates would welcome the opportunity of summer employment in a private practice. Dovetailing with this information were the results of a survey of recent graduates which showed that the dentists participating in the survey were greatly in favour of a program which would get students out into private practice during the summer and most indicated they would be willing to hire a third year student during the summer recess.

Noting that Canadian dental students do not obtain adequate training in private practice orientation during their undergraduate years, delegates drafted the following resolution: "That CDSC 4 strongly recommends to the CDA Council on Education, the NDEB and the provincial licensing bodies that every effort be made to legalize a limited clinical and office management experience, between the final two undergraduate years, under the direct supervision of a licensed dentist."

CDA insurance plans

Dr. Orville Wright, a member of the CDA Insurance and Investment Council, presented conference delegates with a thorough review of all the various plans offered by the Association, with particular emphasis on those which are of direct interest to students.

Concerned that students were not fully informed of the extent of CDA insurance plans until their graduating year, a time when most students already have sufficient coverage, the delegates drew up a resolution calling for a representative of the Council on Insurance and Investment to present the undergraduate package to first year students before the Christmas recess each year, and also present a series of lectures to the graduating classes early in the final year covering all insurance and investment plans offered through CDA.

Two other resolutions dealing with this same topic were also presented. The first was designed to ensure that the student representative in each school be provided with all material pertaining to insurance plans to assist in his recruitment efforts. The second calls for the Council to provide the Student Membership Committee with statistical information from the CDSPI office indicating student membership participation in CDA insurance plans.

National Dental Examining Board

The National Dental Examining Board came in for its fair share of attention during the conference. Ed Yen, McGill University, was elected by the delegates to the 1971 conference to represent students' interests at the CDA Board of Governors annual meeting as well as at the annual meeting of the NDEB and he presented a report on both these meetings. Mr. Yen informed delegates that the NDEB had recently lowered its fee from \$200 to \$175 annually.

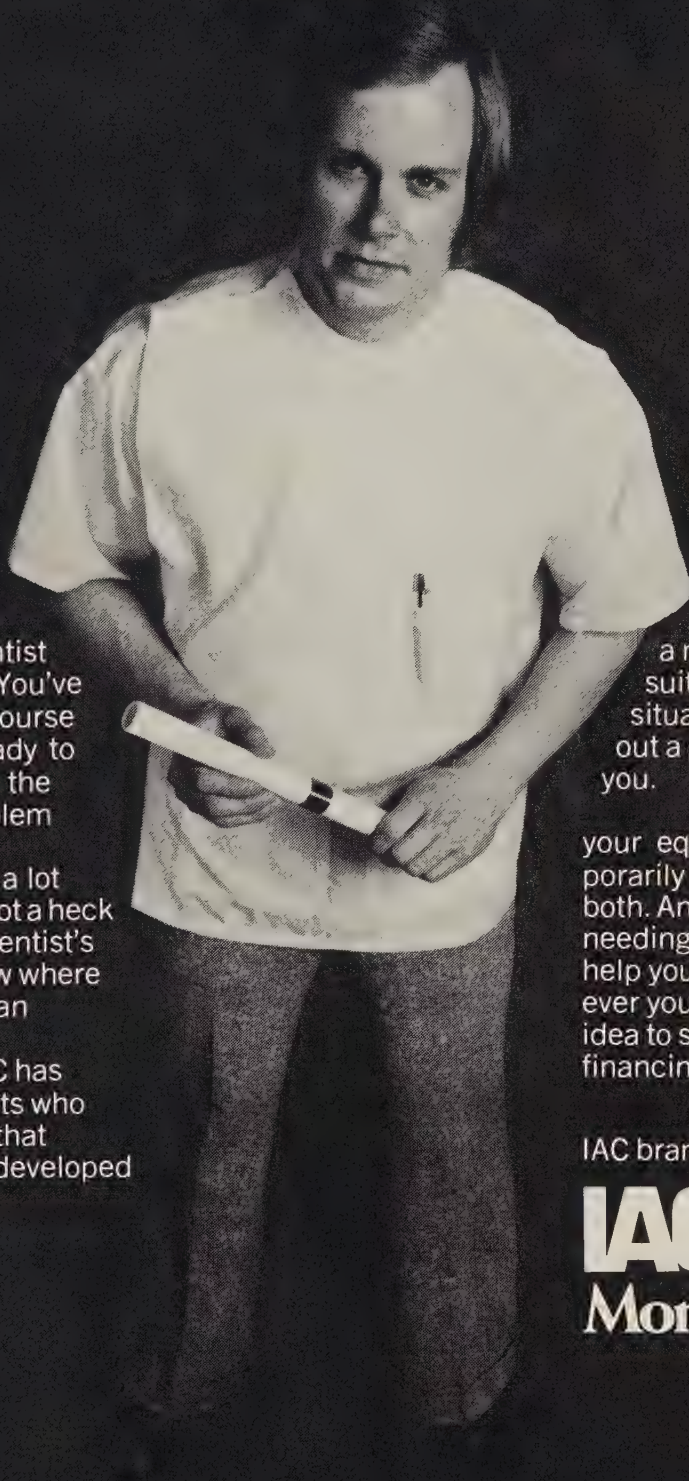
Following Mr. Yen's reports two resolutions dealing with the NDEB policies were presented. The first requests the Dental Examining Board to consider further substantial reduction of the present fee of \$175. The second requests that student representation on the Board be confirmed as a permanent position, the student representative to be elected at the annual conference.

Associateships in dentistry

Dr. Don MacFarlane, a Vancouver practitioner and a member of a group practice with several associates, attended the conference to lead delegates in a discussion on associateships. Dr. MacFarlane

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explained the various advantages and disadvantages of an associateship arrangement and outlined certain guidelines to be followed in selecting an associate. The legal aspects of this type of arrangement were also discussed.

This stimulating session led to the drafting of one of the major resolutions of the conference which called for the Student Membership Committee to pursue the drafting of practical guidelines for CDA student members and practising dentists concerning the advantages and disadvantages of associateships, including both short- and long-term financial implications.

Admission policies of dental schools

Dr. S. W. Leung, dean of UBC's Faculty of Dentistry, spoke to delegates regarding the admissions policies of his school and proceeded to lead the discussion on admission policies for dental schools generally. The delegates expressed the view that students might well be able to offer admission committees some constructive suggestions if they were allowed to attend meetings. In light of this, the following resolution was drafted: "That the Fourth Annual Canadian Dental Students' Conference urge Canadian faculties of dentistry to seriously consider the inclusion of students and part-time faculty members who are engaged in practice in their respective admissions committees."

The curriculum of the various dental schools also came under discussion and delegates expressed a common concern over the lack of time devoted to lectures in business administration. The following resolution was passed: "That the Student Membership Committee be requested to bring to the attention of the Council on Education the apparent time and content inadequacies of the courses in practice orientation and practice administration in the senior years at Canadian dental schools."

Dental economics and the new graduate

Dr. Peter Currie of London, former chairman of the CDA Council on Dental Services and a member of the Student Membership Committee of the CDA, spoke to the conference on the subject of dental economics as it affects the new graduate. He covered such areas as: the pros and cons of leasing dental equipment; the trend towards group practice and expanded use of auxiliaries; and the possibility of a denticare plan in Canada.

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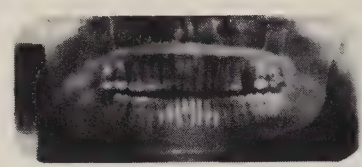
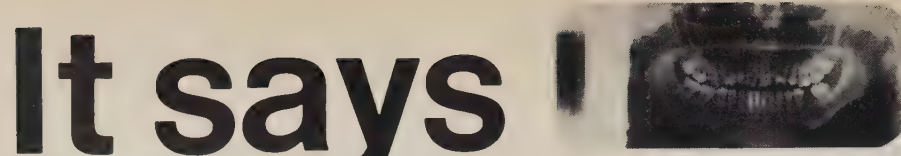
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Occlusal adjustment in periodontal therapy

A fundamental change has occurred in the indications for occlusal adjustment of the natural dentition. Adjustments are now performed where injury to the supporting tissue can be demonstrated and not simply to alter occlusal relationships which deviate from a conceptual norm. Forces producing injury are no longer believed to result from masticatory function but rather from parafunctional habits such as bruxism. Traditional, empirical methods of adjustment of what appear to be abnormal occlusal relationships in patients without signs of trauma from occlusion are therefore undesirable. The absence of tissue injury means that the occlusal forces are acceptable to the tissue despite the fact that the alignment in relationship of the teeth may appear abnormal.

R. G. Stephens, DDS, MSc
Halifax

The diagnosis and clinical management of periodontal disease attributed to abnormal occlusal forces continues to be one of the most vexing problems in dentistry.¹⁻⁴ Many teachers and practitioners are convinced that healthy periodontal structures are dependent on function,¹ and therefore ascribe a useful role to occlusal therapy. There is a large body of thoughtful practitioners, however, who perform occlusal adjustment sparingly and with little conviction. Certainly, a majority of teachers who are aware of the relative lack of scientific fact supporting the subject experience great difficulty in presenting a credible program of instruction. But the traditional methods and reasons for occlusal adjustment are so firmly entrenched that few are willing to concede the absence of proven facts.

Some progress has been made, especially in the periodontal field, as evidenced by marked changes in the indications for therapy based upon the few relatively clear signs and symptoms of trauma from occlusion. Dental schools are attempting to cope with the problem by establishing either departments of occlusion or interdisciplinary courses in occlusion. However, these are mainly structural changes; the fundamental problems of differing language and concepts among various teaching areas persist, making co-ordination exceedingly difficult. The consequent lack of agreement at the teaching level on most of the basic questions relating to occlusion is detrimental to the practice of dentistry.

L'indication de la correction des surfaces occlusales des dents naturelles a subi une modification fondamentale. Les corrections sont maintenant pratiquées quand il est possible de démontrer l'existence d'une lésion aux tissus de support et non seulement pour modifier les rapports occlusaux qui dévient de la norme conceptuelle. Les forces qui provoquent des lésions ne sont plus considérées comme résultant de la fonction masticatoire mais plutôt de manies para-fonctionnelles comme le bruxisme. Les méthodes d'ajustement traditionnelles et empiriques d'une supposée occlusion anormale chez le patient qui ne présente, par ailleurs, aucun symptôme de lésion occasionnée par l'occlusion doivent être considérées comme indésirables. L'absence de lésions signifie que les forces occlusales sont acceptées par les tissus bien que le rapport de l'alignement des dents puisse paraître anormal.

This article demonstrates how our thinking on occlusion has evolved. It also explores some of the current controversies.

Forces generating trauma from occlusion

Two seemingly unrelated events in the 1930s had a profound effect on the theory of occlusal adjustment. In 1935 Schuyler⁵ published what has become the classical reference for occlusal adjustment. The rules and goals which he advocated are still the basis for most current therapy. Schuyler's rationale for occlusal adjustment has undergone a fundamental change, however. The change is related to Frohman who in 1931 re-introduced the term bruxism to the literature.⁶ The extent of this change is important for it has radically altered the clinical indications for occlusal adjustment.

Function — Schuyler contended that the “goal (in occlusal correction) must be the reduction of essential forces applied in the act of mastication and the distribution of such forces in a manner favourable to the supporting tissues.”⁵ He stressed the importance of balanced occlusion to distribute stress over the supporting tissues, and attributed injurious masticatory forces to premature cuspal contacts in centric occlusion and disharmony of guiding inclines in the eccentric occlusal positions. The removal of these disharmonies in centric occlusion and in the eccentric glides was recommended as a therapeutic and preventive measure, for it seemed clear at the time that stress created during mastication in the presence of disharmony was a primary cause of periodontal disease.

Subsequent investigations into the role of tooth contacts and jaw movements during chewing served to remove masticatory force as a primary cause of trauma from occlusion. In fact, during the 1950s the issue of whether the teeth actually meet became quite controversial. Jankelson et al⁷ considered tooth contact in mastication negligible and of no functional importance. Anderson and Picton⁸ reported contact in half of the chewing strokes. Graf and Zander,⁹ on the other hand, found tooth contacts occurred regularly during mastication. Of equal interest were reports stating that the forces applied during mastication were relatively small.^{10,11}

The issue was finally resolved through telemetry which showed that teeth do in fact contact in chewing and swallowing, with most of the contacts occurring in habitual occlusion.¹² The mandible appears to be guided by light, irregular touching contacts into closure without slides. Tooth contacts act as controls which stop or interrupt electromyographic contraction activity so that any inter-

fering tooth is not likely to be traumatized during mastication.¹³ The time of tooth contact during mastication has been estimated to be as little as 17.5 minutes in a 24 hour period.¹⁴

The combination of light contacts of short duration during function with more than enough time for tissue recovery seems to have eliminated masticatory forces as a primary cause of trauma from occlusion.

Parafunction — As the significance of masticatory forces faded, they were replaced by bruxism as the injurious occlusal force — a concept which had been postulated by Karolyi in 1901 and re-introduced by Frohman in 1931. Bruxism denotes nonfunctional nocturnal grinding and gritting of the teeth.⁶ The term is also used in a broader sense to include clenching and clamping. Interest in nonfunctional tooth contacts and jaw movements has led to the introduction of more encompassing terms such as occlusal habit neurosis and the currently used term, parafunction.

Parafunction embraces all repetitive nonfunctional tooth-to-tooth contacts and glides such as grinding, clamping, clenching, pressing and bracing. The forces transmitted to the supporting structures by parafunctional acts are said to be abnormal in magnitude, duration and frequency.¹⁵ Thus, bruxism, clenching and other parafunctional acts which are capable of producing relatively great stress over extended periods have understandably supplanted the relatively light and infrequent functional forces as the chief causative factor in trauma from occlusion.^{16,17}

Current status of trauma from occlusion

One of the most difficult problems in occlusion is that of communication for the subject is replete with contradictory terms. For many years occlusal trauma denoted the abnormal occlusal force which produced periodontal traumatism, the actual injury to tissue. Box¹⁸ advocated the term traumatogenic occlusion to describe an occlusal relationship which had caused or was capable of causing periodontal injury. It is now generally accepted that “trauma from occlusion” or “occlusal trauma” denotes the injury which is identified by certain clinical signs and symptoms.

Trauma from occlusion is periodontal tissue injury caused by occlusal forces which originate in the repetitive parafunctional acts. Where tissue injury occurs in the absence of significant inflammation, it is assumed that occlusal forces originating from parafunction, rather than from mastication,

have caused the injury; primary occlusal trauma is then the applicable diagnostic term. Not all persons with parafunctional habits will exhibit signs or symptoms of trauma from occlusion, however.⁶ In fact, for some patients parafunction will strengthen rather than injure or destroy the periodontal support.¹⁵

Where a moderate to advanced periodontitis exists, occlusal forces, again principally parafunctional but possibly masticatory, can cause trauma from occlusion even though the forces generated may be physiologic in a dentition with normal periodontal support.

Starting from the premise that prophylactic adjustment of the occlusion is no longer a widely recommended practice, the clinical diagnosis of trauma from occlusion caused by parafunction becomes a precondition to occlusal adjustment as a therapeutic procedure.

Prevalence of parafunction — Since parafunction has supplanted mastication as the origin of potentially destructive occlusal forces, some knowledge of its prevalence is desirable. Despite claims that the condition is common, there are few epidemiologic studies to support this contention.

The absence of useful prevalence data is not surprising, for the clinical diagnosis of these subconscious acts of psychic and local origin is extremely difficult.^{6,14} Ramfjord and Ash¹⁵ noted that figures vary between 20 and 80 per cent depending upon diagnostic criteria. In one study it was reported that 88 per cent of patients had bruxism; but when the audible sound of bruxism was used as the only criterion the figure declined to 8 per cent. Despite the scarcity of reliable prevalence information, there have been repeated claims that "a great percentage of the population" is susceptible to parafunction¹⁹ and that the habit may approach "universality."²⁰ But the relationship between periodontal disease and parafunction is by no means as clear as such statements imply. In 1961 Belting and Gupta²¹ found no association between bruxism and periodontal conditions and claimed that bruxism was not a significant cause of tooth mobility. Posselt,²² in 1966, showed that the forces exerted during bruxism are not excessive and do not differ greatly from those applied during mastication. And Ramfjord¹⁵ concluded that the significance of bruxism as a cause of periodontal disease depends on whether the result is trauma from occlusion. He points out that, in most individuals with fairly normal periodontal support, the common sequel to bruxism is compensatory hypertrophy of the periodontal structures.

Although bruxism is reported to be common, the epidemiology of the habit does not warrant

such a conclusion. Moreover, the result in many individuals is adaptation rather than destruction. Consequently, the only justification for treatment of bruxism in relation to periodontitis is the identified presence of trauma from occlusion.

Diagnostic criteria in bruxism and occlusal trauma

Bruxism — Adjustment of the occlusion for patients who brux and show signs of trauma from occlusion is a logical procedure based upon present supportable knowledge. In practice, however, the application of this principle is hampered by the difficulties in diagnosing bruxism.^{15,23-24} The signs and symptoms are not conspicuous, and occlusal discrepancies are not a reliable guide because considerable interference can exist without causing bruxism and conversely bruxism can result from slight interferences. The triggering effect of occlusal discrepancies is not proportional to the degree of the discrepancy but is dependent on psychic stress. According to Graf,¹⁴ there is no direct experimental evidence that emotional or nervous tension and occlusal interferences are responsible for the initiation and maintenance of bruxism. In addition, not all patients who brux will show tissue damage.¹⁶

The general picture then is one of a condition which by its nature and origin is extremely difficult to diagnose. Whether a subconscious habit of this nature should be brought to the conscious level in the course of dental history taking is a question which requires careful consideration. The ultimate indication for occlusal adjustment remains the clinical diagnosis of trauma from occlusion where such adjustment is a part of periodontal therapy.

Trauma from occlusion — The clinical and radiographic signs of trauma from occlusion include excessive tooth mobility associated with a widened periodontal space, thickened lamina dura, angular bone destruction, infrabony pockets and pathological migration of anterior teeth.¹⁴ Yet even these few diagnostic criteria are still controversial.¹ In fact, Ramfjord³ attributes the absence of epidemiologic evidence about the relationship between occlusal forces and periodontal health to disagreement on the diagnosis of trauma from occlusion. According to Zander,²⁵ the clinical problem is how to look at an occlusion and determine whether it has any relationship, negative or positive, to the periodontal structures. Though there is a good measure of agreement that occlusal force can act as a destructive factor in periodontics,¹⁶ there is little evidence to show which types of occlusal relationships can produce the injury.

The diagnosis of trauma from occlusion depends on identifying the accepted signs of injury and is

not to be confused with observing the presence of occlusal prematurities, slides and interferences which are suggested as the signs of "occlusal disharmony."²⁶ As stated by Glickman,²⁷ "no functional relationship is an occlusal disharmony unless it produces injury."

In the absence of periodontitis, trauma from occlusion must be diagnosed from the classical signs alone. The term applied is primary occlusal traumatism; this is rarely seen. In most instances the signs appear in association with the other signs of periodontitis. It should be appreciated that it is impossible to determine whether inflammation or occlusal forces caused the destruction. However, since there is evidence that occlusal forces and inflammation are co-destructive factors, treatment to eliminate both factors is warranted.

Treatment of trauma from occlusion

For those who accept occlusal discrepancies or occlusal interferences as diagnostic of an occlusion needing adjustment, no difficulty exists. Such disharmony can be observed almost universally and methods for correction can be followed step-by-step to obtain "harmony." For the rest, having diagnosed the presence of trauma from occlusion, a further dilemma is apparent. The methods of correction are empirical^{1,4} and were, in fact, developed on the premise of creating harmony during intercuspation and in the eccentric glides which at the time were believed to represent jaw and tooth relationships during mastication. Even though the indications for correction may now rest on a supportable base, the same methods of correction are applied. Centric prematurities, balancing interferences and contact are removed, group function is established, centric relation-centric occlusion (CR-CO) slides are eliminated and so on. Occlusal relationships are changed without any evidence that these relationships are capable of producing trauma.

There is also the controversial issue of whether the terminal hinge position has a key role as a functional position of the mandible. Until very recently the position of intercuspation was regarded as a habitual occlusion which is used because prematurities deflect the mandible from closing in its "proper" centric relation or terminal hinge position. The questionable logic of designating such a functional position as abnormal has heretofore escaped most students. One major periodontal text¹⁶ now advocates that the adjustment be done in the functional (habitual) closure position rather than in centric occlusion. In spite of evidence to support the principle and its obvious common

sense, the traditional appeal of maximum intercuspation in centric relation may be hard to overcome.

Aside from the question of whether to achieve harmony in centric occlusion or in the functional position or in both, there are other potential hazards in the procedures now employed. Schuyler⁵ originally advocated "reasonable limitations" for the securing of balance in the occlusion of the natural teeth. Although an important prosthetic concept, its application to the adjustment of the natural teeth caused a good deal of controversy. Bilateral balance in the natural dentition is no longer attempted; indeed, the position has been reversed. Balancing side prematurities are considered to be among the most destructive of all and even balancing side contact is not believed necessary or desirable in the natural dentition.^{28,29} Balancing side contacts reportedly cause loss of bone, especially around the palatal roots of maxillary molars²⁹ and are associated with fenestrations on the buccal roots of maxillary molars.¹⁷ The nonworking interferences have a great potential for producing pathologic changes in the periodontium³⁰ and have been recognized as perhaps the most destructive of all grasping interferences in periodontics.

Interestingly, one of the major references on the role of balancing side prematurities is Schuyler³¹ who in later articles on occlusal adjustment stated that destructive trauma was associated with premature balancing contacts of the posterior teeth. Although Schuyler was clearly discussing premature or interfering balancing contacts, the item is often referred to as "nonworking contacts" and the impression is created that all balancing side contact is detrimental and should be removed.²⁹ This could eliminate the supportive capacity of a number of teeth, for the same cusps which may interfere on the nonworking side are responsible for supporting the occlusal vertical dimension.³⁰

In 1965 Yuodelis and Mann³² investigated the prevalence and effects of nonworking contacts in a number of periodontal patients. Their results showed that more than half of the molar teeth had balancing side contacts. While cautioning that the study was not designed to test whether there was a "true relationship between periodontal disease and this particular type of occlusal contact," they did report that molar teeth with nonworking contacts were associated with greater bone loss, mobility and pocket depth. An important conclusion was the absence of any significant effect of nonworking contacts on the pattern of bone loss around molar teeth. Of equal interest is the comment that the presence of contacts on the nonworking side in itself may not be regarded as detrimental if these contacts are functional.

It would appear that many of the claims that balancing side contacts and interferences are destructive and can cause pathologic change are extravagant and unsubstantiated; no evidence seems to exist to verify clinical claims of specific patterns of bone loss associated with these contacts. The prevalence of balancing side contacts and their role as centric stops require more careful statements about the need for their elimination.

Unfortunately, teachers and clinicians are left with a situation where treatment recommendations aim at the removal of certain tooth-to-tooth relationships which have not been substantiated as the cause of lesions believed to be the result by abnormal occlusal forces.

A good deal of discretion is required when there is no choice but the use of an empirical method of treatment. The potential for causing harm is great. The following comment by Ramfjord and Ash¹⁵ bears this out: "Many patients have had occlusal problems created by occlusal adjustment procedures and the percentage of iatrogenic disease has been disturbingly high in this field."

Conclusion

The preceding review depicts the current attitudes toward the adjustment of occlusion as a therapeutic procedure. Trauma from occlusion is the injury to periodontal structures and is identified by certain signs and symptoms. The presence of injury is the indication for occlusal adjustment. Parafunction rather than mastication is the origin of forces capable of producing such injury except in moderate to severe periodontitis when even the light, infrequent forces of mastication can be injurious.

The diagnosis of trauma from occlusion requires careful distinction between the signs of adaptation and injury; it is not the identification of such almost universal phenomena as centric prematurities, balancing side contacts and interferences and CR-CO slides. These are terms describing occlusal relationships which are not in themselves pathologic or pathognomonic of any disease.

A dilemma arises when, having identified traumatic injury in the periodontal supporting tissues, it becomes necessary to alter the occlusal relationships with no clear evidence that such relationships have caused the injury. To say the least, it is disturbing that so many occlusions continue to be reconstructed for the purpose of preventing or treating periodontal disease in spite of the fact that we simply do not know whether such practices increase the longevity of the dentition.^{1,2}

With respect to parafunction, the problem is even more apparent. In the absence of data to indicate

its prevalence and the difficulties of diagnosis, there is no clarity in the role of the dentist. Although local aetiology has been identified and occlusal therapy is reported to be successful,⁶ it is also evident that psychic causes are basic to the habit. Probing into this type of disturbance is not without risk to the patient and justifiable questions can be raised concerning the wisdom of such practices as a purely dental investigation.

Where trauma from occlusion is identified, treatment for this alone is justified as a part of periodontal therapy although recognition of the empirical nature of the techniques of treatment should restrain the overzealous.

The role of teaching departments in this phase of dental education, and ultimately in practice, is critical. The techniques of occlusal adjustment are undoubtedly an exercise in skill and attention to detail, but the opportunities for misapplication are limitless unless all are responsibly aware of the lack of a satisfactory basis for such application. At the risk of developing cynical attitudes, the subject should be presented with candour at the undergraduate level.

With the growing interest in continuing education, there will also be a greater demand for courses in occlusal therapy. The desire to make such courses clinically practical will encourage technique presentations; exposure of our lack of underlying knowledge will not be popular even though it is highly desirable. Programs can be offered in the conviction that certain indications for occlusal therapy have a supportable basis in fact. It should be quite clear, however, that the methods applied in therapy are empirical and can be applied with restraint only where definitive indications exist.

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EXECUTIVE DIRECTOR'S PAGE

(continued from page 303)

province, amended the by-laws of the Manitoba Dentistry Act to include the following clauses:

12(1). Every licentiate when applying for renewal of a licence which expires on the 28th day of February, 1976, or on the expiry date of his third annual licence, whichever is the later, and on the expiry date of every third licence year thereafter, shall present evidence that he has completed the requirements of continuing education in dentistry as set out in Schedule "B" to this by-law.

12(2). Subject to Subsection (4) no licentiate to whom Subsection (1) applies is entitled to have his licence renewed unless the registrar is satisfied that he has completed such requirements.

12(3). Where the registrar refuses to renew a licence under this section the applicant may appeal the decision of the registrar to the board.

12(4). The board may consider any and all matters including studies undertaken privately by the applicant or circumstances beyond the control of the applicant which have prevented completion of the requirements of continuing education by him and the board may in its absolute discretion renew the licence of the applicant.

The Manitoba regulations, as you will have noted, apply both to general practitioners and specialist dentists.

The Manitoba Dental Association's actions will be brought to Mr. Turner's attention as further evidence of the need to review Section 60(f) of Canada's Income Tax Act.

Dental caries in 506 young Ontario adults

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A survey of dental caries and treatment in 506 Ontario community college students aged 17 to 25 showed that treatment varied directly with socio-economic standing. The mean DMF index was 12, and caries prevalence in females was not significantly higher than in males.

Une enquête sur la carie dentaire et les traitements dispensés à 506 étudiants de collèges de l'Ontario a révélé que le recours aux traitements était directement proportionnel au niveau socio-économique. L'indice moyen DMF s'établit à 12 et la fréquence des caries chez les filles n'apparaît pas plus élevée que chez les garçons de façon appréciable.

The dental literature indicates that investigations into the dental status of 17 to 25 year old adults are few in number. The shortage of information about the young adult population in Canada is lamentable — only one major Canadian study exists¹ — as such data are vital to the future evaluation of proposed children's dental health plans. The present investigation was undertaken to fill a gap in dental epidemiological knowledge in Canada by surveying and reporting on the dental caries status of a sample of Ontario community college students.

One of the earliest studies to probe the dental caries prevalence in young adults was a survey of 10,445 university students by Brekhus.² It is of historical interest that 17.3 per cent of the students' fillings consisted of gold. Dental survey methodology advanced significantly in the late 1930s with the introduction by Klein, Palmer and Knutson³ of the decayed, missing, filled (DMF) teeth index. Further progress by Healy and Cheyne⁴ and by Hadjimarkos and Storvick⁵ set the stage for the more recent dental surveys of young adults (Table 1).^{1,6-9}

Method

Students from six Ontario colleges of applied arts and technology formed the population for the study. This seemed to be a particularly good group on which to study dental caries for the following reasons: the age distribution of the students was very favourable for this project, over 80 per cent being between the ages of 16 and 24 years; the combined student body totalled 9,000, with background education ranging from five to 13 years of high school in both matriculation and non-matriculation programs. Permission for the study was granted by the college administration on the condition that only volunteer students would be included in the sample which meant that sampling from lists was replaced by haphazard sampling.

Summary of dental caries prevalence: reports on young adults

Table 1

Investigator	No.	Approximate age	Sex	D	M	F	DMF
Fulton et al ⁶		20-24	M	4.3	4.6	6.4	15.3
			F	2.9	5.2	7.6	15.7
National Centre for Health Statistics ⁷		18-24	M	2.1	5.0	7.2	14.3
			F	1.9	5.5	7.7	15.1
Beck, D. ⁸	2,145	15-21	M,F	6.5	1.3	11.0	18.8
Sheiham, A. and Hobdell, M. ⁹	2,004	15-19	M,F	1.2	1.5	8.3	11.0
Canadian Armed Forces ¹	2,400	17-24	M	7.2	4.5	2.9	14.6

Regarding the sample size, the review of the literature indicated that a conservative estimate of the expected mean DMF was 13.0 and a reasonable estimate of the standard deviation was 5.0. Accepting a maximum error of the estimate as 5.0 per cent of the mean and a confidence parameter, alpha, of 0.05, the sample size, n , was derived as $n = \frac{1.96^2 \times 5.0^2}{(0.05 \times 13)^2} = 227$. Taking one such sample for males and another for females, a total sample $n = 2 \times 227 = 454$ was calculated. The sample distribution of the six colleges is shown in Table 2.

All cases were examined by the author, the data being recorded on specially designed forms by a trained auxiliary. The examinations were conducted in daylight with a directional incandescent lamp, shepherd crook explorers and No. 4 plane mirrors. Radiographs were not taken. Third molars were excluded from the study and teeth missing for congenital, orthodontic or traumatic reasons were not included in the M component of the DMF count.

Results

The age-sex specific DMF components as well as the overall DMFT index are presented in Table 3. The results from the 17 to 25 year age groups may be ignored since the sample sizes were too small to provide meaningful estimates. The greater number of males than females in the sample reflects the fact that three times as many males attended the six colleges.

To bring out the relationship of age to caries prevalence within this age group, a linear regression analysis was performed on the data. The regression coefficient of DMF on age for the combined sexes was computed as 0.463 and the analysis of variance

test established the significance of this slope ($F_{1,504} = 11.6$, $P < 0.05$). This implies that between the ages of 17 and 25 the DMF count increased by one-half tooth per year.

To test the difference in DMF scores between males and females, an analysis of co-variance, adjusting simultaneously for age and socio-economic standing, was performed. The analysis indicated that the index disparity between sexes was not significant ($F_{1,442} = 2.8$, $P < 0.05$).

A breakdown of the DMF findings according to college is given in Table 4. An analysis of variance on the data showed that there was no difference in tooth decay prevalence between college samples. However, by a similar analysis, the proportion of filled teeth varied significantly between the colleges ($F_{5,500} = 6.8$, $P < 0.05$). The Kingston group had 39.7 per cent of DMF teeth filled, as against 72.8 per cent for the remaining groups. London students had 80.4 per cent of their DMF teeth filled. The remarkable consistency in the mean age for each college was a very desirable feature of the collected

Sample composition by colleges

Table 2

College	Projected sample	Actual sample
Peterborough	50	48
Kingston	50	51
Scarborough	150	149
Etobicoke	150	132
North York	100	72
London	50	54
Total	550	506

DMF scores by age-sex specific category

Table 3

Age	Sex	No.	D	M	F	DMF
17	M	1	5.00	1.00	0.00	6.00
	F	5	0.80	1.80	9.20	11.80
18	M	22	3.04	1.54	5.95	10.53
	F	18	1.77	2.27	8.72	12.76
19	M	37	2.91	1.37	5.94	10.22
	F	61	1.55	1.04	9.14	11.73
20	M	62	2.30	1.43	6.87	10.60
	F	50	1.76	0.74	9.66	12.16
21	M	85	2.11	1.01	8.90	12.02
	F	30	1.63	1.50	8.23	11.36
22	M	50	1.84	1.08	9.04	11.96
	F	15	1.20	1.13	12.46	14.79
23	M	35	2.11	2.80	9.54	14.45
	F	8	3.25	1.87	7.12	12.24
24	M	14	3.00	5.64	5.07	13.71
	F	5	3.80	3.40	7.20	14.40
25	M	6	3.33	1.33	6.83	11.49
	F	2	10.50	4.00	1.50	16.00
Total	M	312	2.34	1.60	7.79	11.73
	F	194	1.81	1.30	9.14	12.25
Combined total		506	2.14	1.48	8.31	11.93

data, especially since the regression analysis in the preceding section made it clear that age is a determining factor in the true DMF count for any group.

The cases examined were classified into socio-economic groups according to the Blishen scale (score 1 for highest socio-economic standing, 7 for the lowest).¹⁰ The DMF data, classified in this way, are presented in Table 5. It is evident that the caries prevalence was little affected by the socio-economic standing. However, the filled teeth component decreased linearly with lower socio-economic status ($b = -0.6$, $F_{1,443} = 14.2$, and $P < 0.05$). The age means for the socio-economic groups were constant.

Discussion

In order to draw reasonable inferences from the caries findings, it was required that the data met rudimentary criteria. One criterion which was not achieved was random sampling. Nevertheless, close scrutiny of the data with regard to the distribution of age, sex and socio-economic standing revealed that reasonable confidence may be justified for most of the findings. The assumptions of independence and normality (in the statistical sense) appeared justified, the latter being tested with Fisher's G statistics.

DMF scores by colleges

Table 4

College	No.	Age mean	Social class mean	D	M	F	DMF
Peterborough	48	20.5	4.2	3.45	1.43	8.45	13.33
Kingston	51	20.7	5.0	3.74	2.94	4.39	11.07
Scarborough	149	20.4	3.8	2.07	1.12	9.20	12.39
Etobicoke	132	20.6	4.2	1.65	1.87	8.34	11.86
North York	72	20.7	3.6	1.75	1.02	8.93	11.70
London	54	20.7	4.0	1.25	0.81	8.50	10.56

The age-sex distribution of dental caries prevalence produced no surprises. The overall DMF count, 12, was close to the initial estimate of 13. The DMF standard deviation was 5.2 which also came near to the estimated 5.0. The expected relationship of DMF to age was confirmed by a regression analysis. The overall DMF components (D = 2.1, M = 1.5, F = 8.3) appeared to indicate a reasonably satisfactory treatment level in this population. This was especially so when compared to the Ontario findings of the Canadian Forces survey (D = 6.0, M = 3.2, F = 3.8).

Due to a possible influence by age, the sex difference in caries prevalence was studied by means of a co-variance analysis. No significant sex difference in caries prevalence was found to exist, a finding in accord with that of Klein and Palmer,¹¹ though unanimity on this point is still lacking.

In comparing the colleges, it was shown that no significant difference in caries prevalence existed. Precisely because of this finding, the large disparity in the treatment criterion, F/DMF, was alarming. That the Kingston sample placed poorly was not explainable on the basis of age or rural influence. However, its relatively lower socio-economic standing may have had some bearing. If this were the case, it would confirm the view that socio-economic standing does not significantly influence caries prevalence but has a strong impact on treatment levels. This appears to be the position of Klein and Palmer¹² who, after studying the economic status and concomitant dental problems of 200,000 children surveyed by the US Public Health Service, stated: "The analysis appears to show that the economic status of these communities bears little relationship to the tendency of children to experience attack by caries in the permanent teeth. On the other hand, the study clearly reveals that intimate relationships exist between economic status, the volume of dental care dispensed and the total number of permanent teeth extracted and indicated for extraction."

Conclusions

1. The mean DMF index for southern Ontario community colleges was approximately 12.
2. The data indicated that the caries prevalence in females was not significantly higher than in males for the age range 17 to 25 years.
3. The treatment level index (F/DMF) varied directly with socio-economic standing. In the study population the higher socio-economic groups had 80 per cent of affected teeth restored, whereas in the lower socio-economic groups 50 to 65 per cent of affected teeth were restored.

DMF scores by socio-economic groups Table 5

Social* group	No.	D	M	F	DMF
1	18	1.88	0.77	9.38	12.03
2	49	1.75	0.51	9.48	11.74
3	133	1.31	0.72	9.81	11.84
4	47	1.55	1.25	7.36	10.16
5	121	2.60	1.89	7.19	11.68
6	35	3.60	2.91	6.31	12.82
7	42	2.52	1.85	8.19	12.56

*Blisshen scale¹⁰

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Maxillo-mandibular surgery for correction of dentofacial deformities:

2. Mandibular prognathism

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This is the second in a series of articles on current practice of maxillo-mandibular surgery. The articles are provided by courtesy of the Royal College of Dentists of Canada.

Theberge¹ has broadly classified mandibular prognathism as a developmental disturbance in an anteroposterior direction, and specifically as an anteroposterior over-development of the lower third of the face. Caldwell² defined mandibular prognathism as "an abnormal projection forward" of the lower jaw. Perhaps the most workable definition, especially from the standpoint of dentofacial deformities, is the two-criteria definition proposed by Horowitz et al:³ (1) facial disharmony because of an unduly prominent lower portion of the face, and (2) the presence of a Class III malocclusion.

Mandibular prognathism could be a result of an over-active growth centre in the mandibular condyle, because the epiphyseal-like growth of the condylar cartilage contributes to the increase of the overall length of the mandible.⁴ The mandible also normally undergoes appositional growth at all of its borders except the anterior border of the ramus. The normal growth pattern of the mandible is downward and forward.^{5,6} Hereditary, endocrine and environmental factors have also been impli-

cated in the aetiology of mandibular prognathism, but as yet no concrete evidence has been established.⁷

Aside from the obvious aesthetic consideration, there are many other problems associated with mandibular prognathism. Improper occlusion can lead to masticatory difficulty, digestive upsets and periodontal problems. Proper speech may be difficult. The dentist would have an almost impossible task constructing adequate dentures for an edentulous prognathic individual. Temporomandibular joint pain and dysfunction may be manifested.^{2,8}

The first attempts at surgical correction of mandibular prognathism were aimed primarily at the body of the mandible. Hullihen⁹ originated the body ostectomy procedure in 1849. Since then, various intra- and extra-oral techniques have been proposed for body ostectomy, ranging from ostectomy at the angle of the mandible¹⁰ to ostectomy in the region of the second bicuspid and first molar with the removal of the involved teeth.¹¹ In the past two decades, there has been a marked trend to surgery in the ramus in preference to surgery in the body of the mandible.

The basic techniques available today can be grouped into four categories: (1) osteotomy in the condylar neck, (2) osteotomies of the ramus, (3) ostectomy of the body, (4) anterior alveolar osteotomy (Fig 1). In the ramus procedures, the entire body of the mandible is repositioned, whereas the body of the mandible is shortened in the osteotomy procedures.

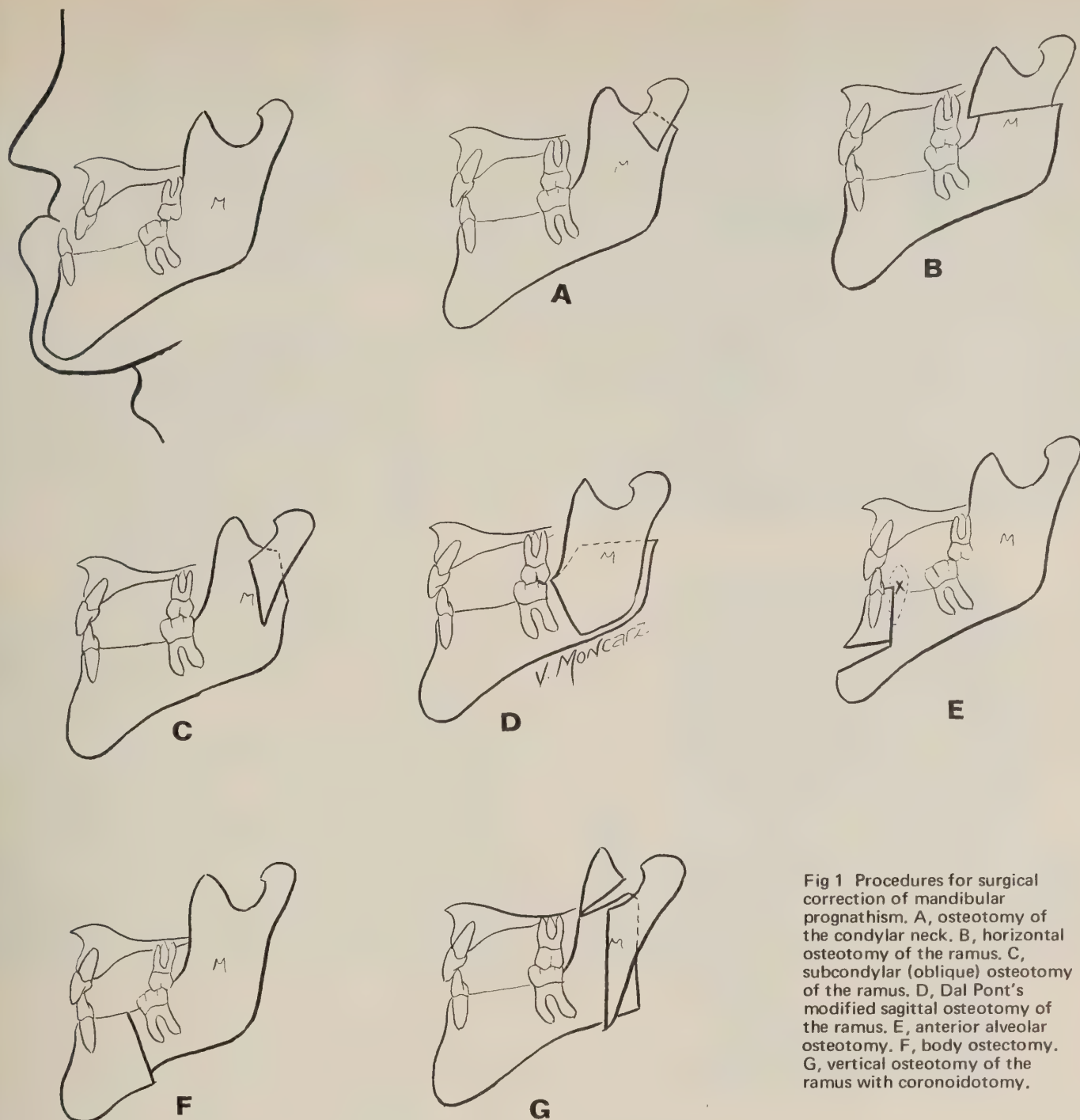


Fig 1 Procedures for surgical correction of mandibular prognathism. A, osteotomy of the condylar neck. B, horizontal osteotomy of the ramus. C, subcondylar (oblique) osteotomy of the ramus. D, Dal Pont's modified sagittal osteotomy of the ramus. E, anterior alveolar osteotomy. F, body osteotomy. G, vertical osteotomy of the ramus with coronoidotomy.

Osteotomy in the condylar neck

Pettit and Walrath,¹² in 1932, were the first to suggest an osteotomy through the neck of the condyle for correction of mandibular prognathism. Previously, Dufourmental¹³ (1921) had advocated condylectomy for correction of a protrusive lower jaw. Surgery on the condyle was first reported by Jaboulay and Berard¹⁴ in 1898. They destroyed the condyle with hand instruments via a pre-auricular incision.

Condylar neck osteotomy is indicated in patients with a mild degree of prognathism and a gonial

angle within normal limits. The operation may be accomplished via a pre-auricular or Risdon incision. Most commonly, a blind section using the Gigli saw is employed (Fig 2).

The advantages of the blind procedure are simplicity, short duration, minimal scarring, preservation of the mandibular nerve, and no loss of teeth or bone. There are many disadvantages, however, because of the hazards encountered in this area. Deep, uncontrollable haemorrhage may ensue from severance of the maxillary artery and retro-mandibular vein. The branches of the facial nerve may be damaged, resulting in permanent or transient facial paralysis. Formation of a salivary fistula

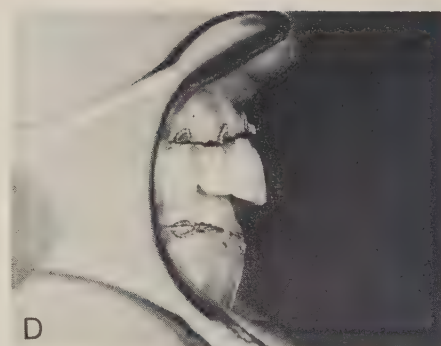
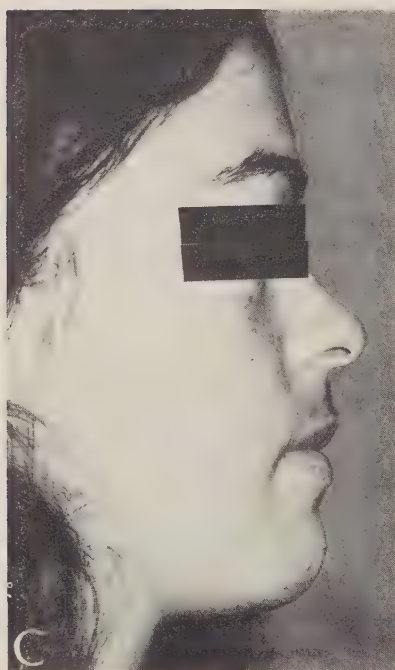


Fig 2 Condylar neck osteotomy with a Gigli saw. A, pre-operative profile. B, pre-operative occlusion showing minimal mandibular prognathism. C, postoperative profile. No external scars are visible. D, postoperative occlusion.

may result from damage to the parotid gland or its capsule. Another relatively frequent complication of the blind procedure is gustatory hyperhidrosis, especially when it is employed for subcondylar osteotomy.¹⁵ This problem is related to the misdirected regeneration of the cut secretory and vasodilator fibres of branches of the auriculotemporal nerve which allows impulses to be conducted into channels that stimulate secretions in a special region of skin, instead of receiving sensations. This results in sweating and flushed skin during mastication.

Other problems that may arise include lack of control of the fragments, resulting in posterior superior displacement of the proximal fragment as

the mandible is retruded. The meniscus or the head of the condyle may be jammed against the glenoid fossa resulting in severe pain postoperatively and during immobilization. Open bite is a distinct possibility, especially if condylar neck osteotomy is employed for other than mildly prognathic individuals, because the temporalis muscle prohibits more than 10 mm posterior movement of the coronoid process.² If stretched beyond its normal range of extensibility this muscle becomes spastic through the stretch reflex mechanism, thereby tending to elevate the ramus and rotate the mandible about a fulcrum on the mandibular teeth. This upward displacement of the ramus is aggravated by downward displacement of the lower portion of the mandible through the suprahyoid musculature, creating an open bite.

Ramus procedures

There has been considerable misunderstanding over the terminology of procedures carried out in

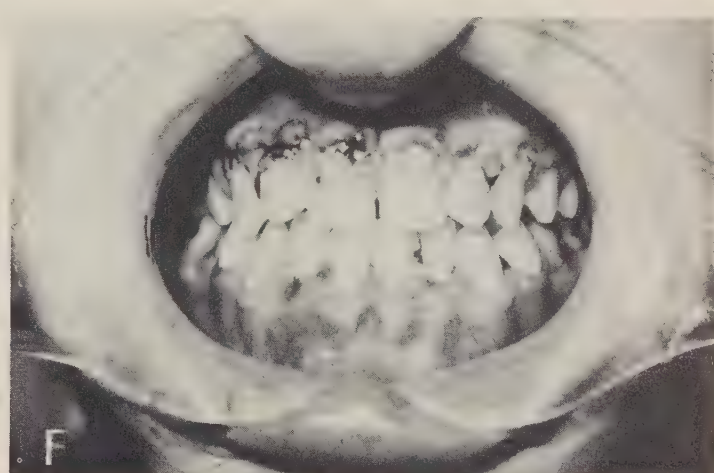
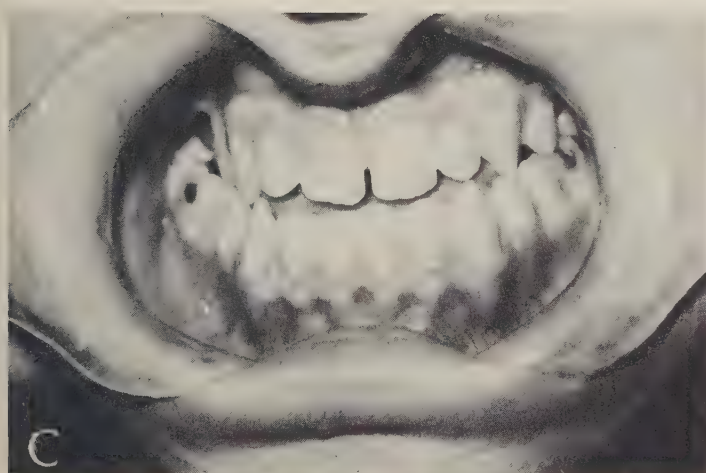


Fig 3 Subcondylar (oblique) osteotomy of the ramus. A, pre-operative profile. B, pre-operative occlusion showing moderately severe mandibular prognathism. C, midlines do not coincide in the pre-operative occlusion. D, postoperative profile showing improved chin position. A faint scar remains below the angle of the mandible. E, postoperative occlusion at the time of removal of the fixation arches. F, midlines coincide in the postoperative occlusion.

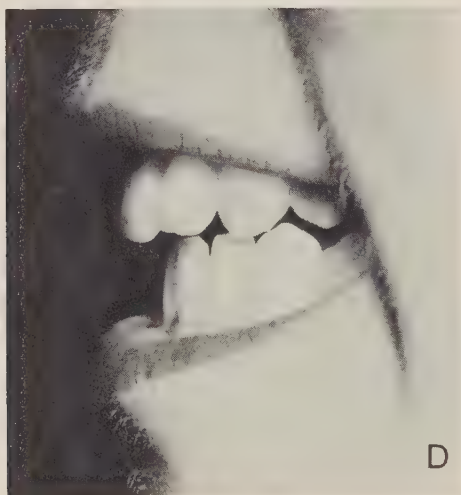


Fig 4 Severe mandibular prognathism corrected by vertical osteotomy of the ramus with coronoidotomy. A, pre-operative profile showing the very prominent chin and the obtuse gonial angle. B, pre-operative occlusion with mandibular prognathism exceeding 12 mm. C, postoperative profile. D, postoperative occlusion.

the ramus. Our discussion of ramus procedures will deal with subcondylar (oblique) osteotomy, vertical osteotomy, horizontal osteotomy and sagittal osteotomy.

Subcondylar (oblique) osteotomy — This osteotomy runs from the lowest point of the sigmoid notch downward and backward beyond the mandibular foramen to a point above the angle of the mandible¹⁶ (Fig. 1C). It is the method of choice for treating mild to moderately prognathic mandibles with a gonial angle within reasonably normal limits. Subcondylar osteotomy is not advocated for severe cases⁸ (Fig 3).

Two surgical approaches are commonly used for this technique: the blind approach with the Gigli

saw and the Risdon approach at the angle of the mandible. The blind subcondylar osteotomy was first carried out by Kostecka in 1930,¹⁷ and has been used by many oral surgeons since then. The indications and hazards of this procedure have already been outlined.

Hinds¹⁸ and Robinson¹⁹ devised similar extra-oral subcondylar osteotomies (1956–1958). In this procedure, no decortication or mortising was done. The proximal fragment simply overlapped the distal fragment laterally after the teeth were wired into the new corrected occlusion. The period of immobilization was six to eight weeks.

Subcondylar osteotomy offers many advantages to the surgeon as well as the patient. This simple technique can be completed in a relatively short time with standard commercially available instruments.² There is minimal risk of damage to the mandibular nerve or of excessive haemorrhage. The results are good from the standpoint of function and aesthetics. There is minimal scarring and very little tendency for relapse or open bite because bone healing is usually complete. Temporomandibular joint relationships and function are normal. Elevation and replacement of the investing musculature ensure good success.

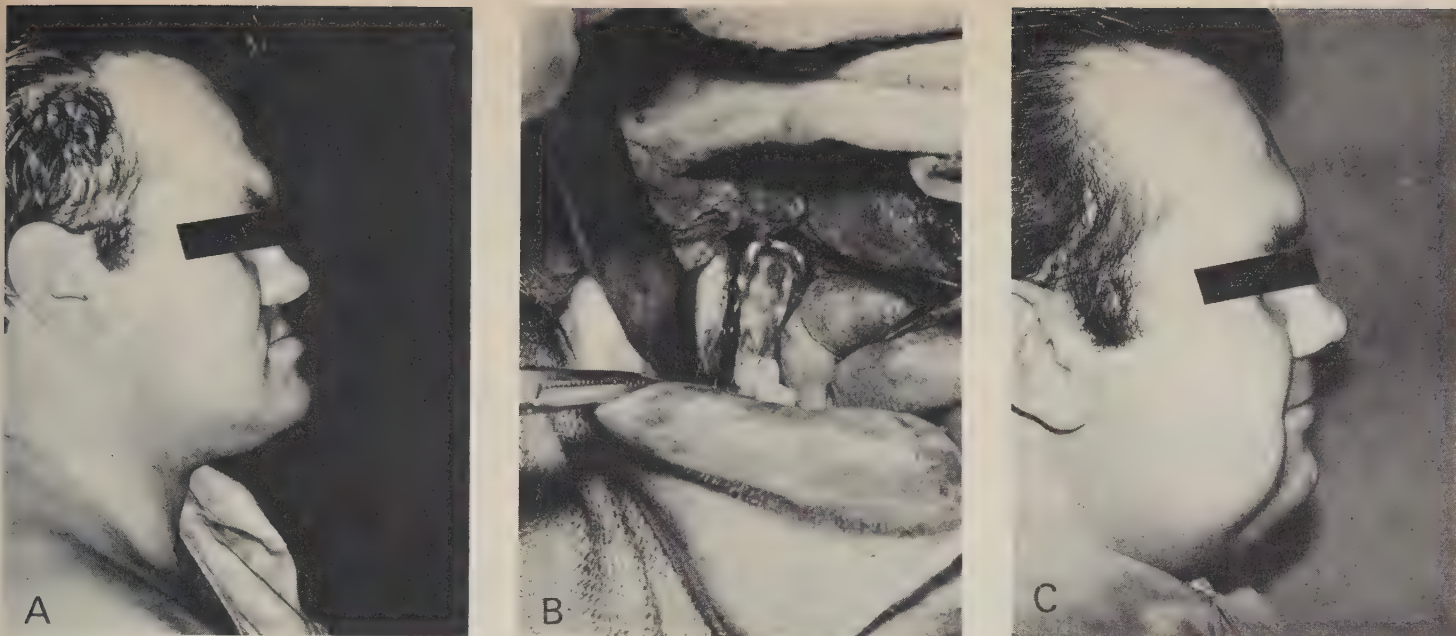


Fig 5 Sagittal osteotomy. A, pre-operative profile. B, mandible sectioned in the sagittal plane. C, postoperative profile 10 days after the operation. There are no external scars but a slight amount of oedema persists. Note the improved position of the chin.

A transient paraesthesia may sometimes occur due to stretching or trauma to the mandibular branch of the facial nerve. Occasionally, haemorrhage may be a problem, but if care is taken this can be eliminated.

Vertical osteotomy in the ramus — Not all patients with prognathism can be treated by subcondylar osteotomy. Vertical osteotomy is ideally suited for correcting extreme prognathism (in excess of 10–12 mm) in dentulous and edentulous individuals.²⁰ These patients invariably manifest an extremely obtuse gonial angle (Fig 4).

The temporalis muscle limits the amount of posterior displacement of the mandible and in extremely prognathic individuals this may produce a compromise result or a tendency to relapse.² The problem can be eliminated by performing a coronoidotomy in conjunction with the vertical osteotomy (Fig 1G).

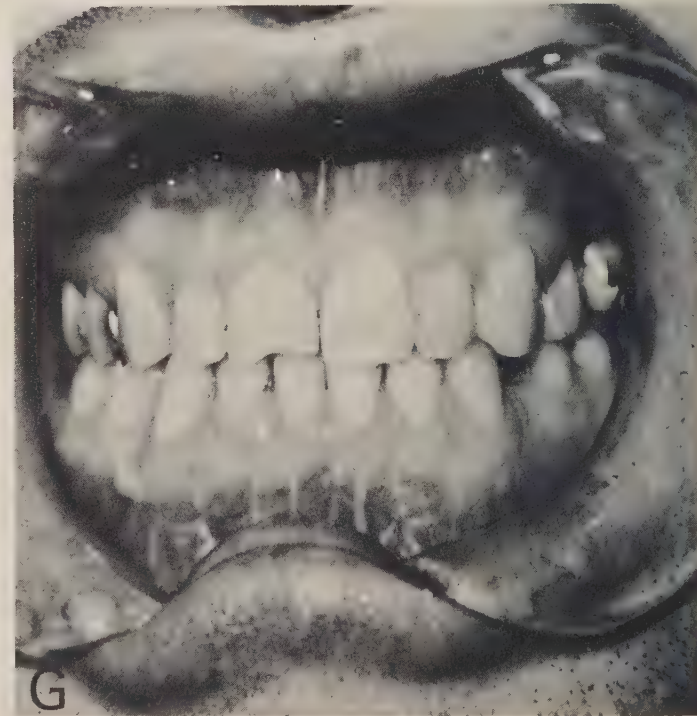
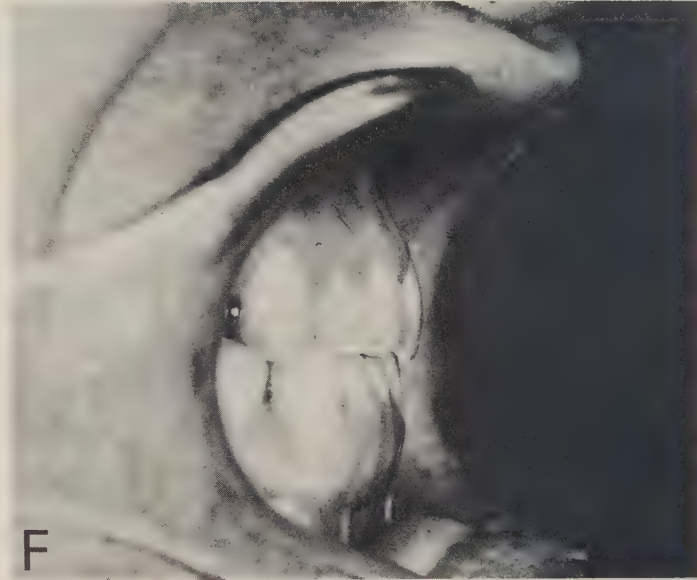
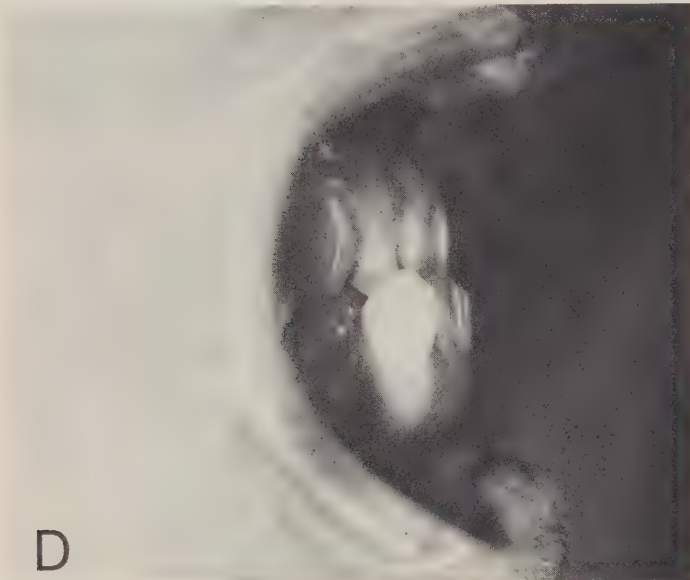
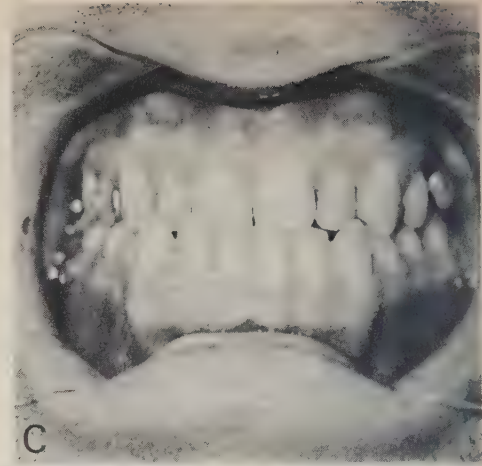
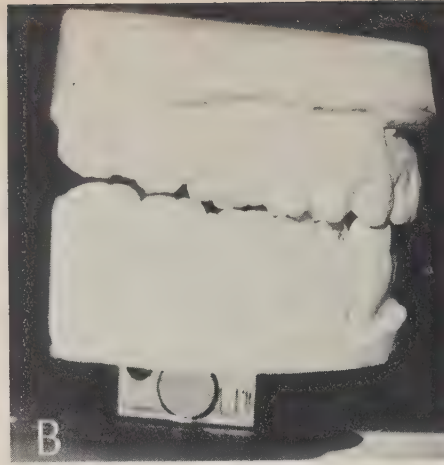
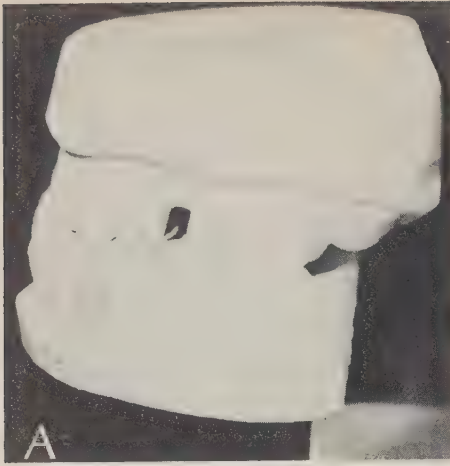
Caldwell and Letterman²¹ first described the details of this operation and since that time modifications of the original procedure have been proposed. Surgically, the ramus is exposed via the Risdon approach with a longer incision. The osteotomy runs in a straight line from the lowest point of the sigmoid notch to the angle of the mandible just behind the prominence of the mandibular foramen (Fig 1G). The lateral cortex of the distal fragment is decorticated and mortised and the

proximal fragment is overlapped and wired into place with intra-osseous wires. The fact that the fragments are wired together with good medullary bone contact reduces the immobilization time from six to eight weeks to three to four weeks. Positive, firm intra-osseous wiring of the sectioned parts provides adequate fixation and intra-oral splints are not required in edentulous patients.²² On the other hand, Shira²³ advocates the use of arbitrarily related splints.

The problems, complications and advantages are similar to those encountered in subcondylar osteotomy. Even with a large degree of posterior movement of the mandible the overlying tissue conforms to the underlying bony skeleton. The tongue is not compromised because it atrophies according to the dimensions of the cavity in which it is contained. Rarely is there a problem with speech.

Horizontal osteotomy of the ramus — This technique designed by Babcock²⁴ has been discarded by most oral surgeons (Fig 1B). It may be accomplished by blind section with a Gigli saw or by an open intra- or extra-oral approach.

Aside from the hazards of blind surgery, other disadvantages limit the usefulness of this procedure. There is a tendency for open bite because of the tremendous pull exerted by the masseter and medial pterygoid muscles on the distal fragment.



The upward pull of the temporalis muscle on the proximal fragment telescopes the fragments, shortening the vertical ramus height. Delayed union or non-union may result from the thinness of the ramus and its poor bony content despite direct wiring. Healing may require long periods of immobilization because of the predominance of cortical bone in the ramus at the level of the bone cut. This in itself tends to delay bone union.

Sagittal (split) osteotomy — This intra-oral technique is ideal for mandibular prognathism associated with a significant anterior open bite.²⁵ It is not the treatment of choice for mandibular prognathism. Sixteen years ago, Trauner and Obwegeser²⁶ published a very extensive paper on the surgical correction of jaw deformities in which they first proposed the sagittal split technique. Dal Pont's²⁷ modification to the inferior border produces a more pronounced gonial angle and, hence, is preferable for correcting mandibular retrognathism (Fig 1D). Because of the diminished internal osseous reinforcement immediately posterior to the mandibular foramen, Hunsuck²⁸ carries his horizontal osteotomy on the medial aspect of the mandibular ramus to the ridge of the mandibular neck above the mandibular foramen, instead of extending the osteotomy to the posterior border. He also suggests that internal wiring is not essential.

If properly performed, this technique is extremely useful in jaw deformity surgery. Because of the broad cancellous apposition of fragments, there is a lesser tendency for relapse and much earlier bony union. No external scars remain because of the intra-oral approach. This is especially significant in keloid formers (Fig 5).

Behrman²⁹ cites the following as complications of sagittal osteotomy. Airway obstruction and oedema can be of sufficient magnitude to necessitate a tracheostomy. Severe haemorrhage from severance of the maxillary artery can be frequently controlled by pressure packs; however, external carotid ligation may be necessary. Damage to the inferior alveolar nerve almost invariably occurs, producing a transient or permanent anaesthesia of

the lower lip. Since this procedure is intra-oral, infection has been known to occur, resulting in delayed union or non-union. Fragmentation of the ramus may cause sequestration and necrosis. Excessive retraction of the medial soft tissues may compromise the blood supply resulting in resorption of the proximal fragment due to ischaemia. All of these complications indicate the need for thorough knowledge of the anatomy of the area and extreme care in the performance of this operation.

Body ostectomy

The indications for this technique are limited to those malocclusions that are not amenable to correction in the ramus. A mandible that is bilaterally edentulous in the bicuspid and first molar region and has a good gonial angle is ideal for correction by a body ostectomy. Gross arch length asymmetry lends itself readily to correction by this technique. If the posterior occlusion is highly functional and if surgery in the ramus would likely produce an unsatisfactory result, body osteotomy is indicated.^{8,24}

Hullihen⁹ pioneered the body osteotomy procedure. New and Erich³⁰ suggested a one-stage combined intra-oral-extra-oral approach, in which the inferior alveolar nerve was preserved. Dingman³¹ devised the "Dingman two-stage operation" that was popular in the 1950s. In the first stage, the involved tooth was removed and the upper part of the ostectomy cuts were made. Weeks later the ostectomy was completed with the preservation of the mandibular nerve (Fig 1F). Recently, Trauner¹⁰ has advocated an ostectomy of the angle of the mandible for the correction of prognathism.

Indications for this procedure should be limited to those mentioned, and even then, untoward consequences may ensue. Non-union, delayed union and permanent or temporary anaesthesia of the lip are instant hazards.³² Poor bony contact requires prolonged immobilization. The suprahyoid musculature tends to pull down the distal segment, causing an anterior open bite. The loss of more than one tooth on each side in extreme cases markedly reduces the masticatory efficiency of the dentition. There is no improvement of the gonial angle.

Anterior alveolar osteotomy

The indications for this intra-oral technique are limited to those cases where the posterior occlusion is functional, and surgical correction in the ramus or body would lead to an unfavourable and unstable occlusion (Fig 6). The soft tissue profile is of paramount importance.

Fig 6 Anterior alveolar osteotomy. A, study cast showing mild prognathism. B, retrusion of the entire mandibular arch produces an unstable occlusion. C, pre-operative occlusion. D, a minimal jump is needed for surgical correction. E, anterior alveolar osteotomy performed after removal of the two first bicuspid. F, G, postoperative occlusion one year after the operation.

Since the soft tissue is usually displaced by approximately two-thirds of the distance of the bony segment displacement, retrusion of the lower segment normally causes the lower lip to fall slightly backwards, eliminating the prognathic appearance if the chin is not too prominent. If the chin is prominent, a genioplasty can be performed intra-orally, and the wedge of bone that is removed can be used as a graft if a significant bony gap prevails between the osteotomized segment and the mandible.³³

Anterior alveolar osteotomy necessarily involves the loss of two teeth if a full dentition is present (Fig 1E). Temporary anaesthesia of the lower lip is inevitable due to the retraction of the mental nerve. Relapse is unusual. The vitality of the lower incisors is not impaired because bone healing and revascularization are complete if the lingual mucoperiosteum is kept intact.³⁴

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Instant black and white slides in the dental office

Alex Domokos

Winnipeg

During my numerous dental photography courses in the past decade dentists have often asked how they can obtain instant black and white slides. There was no satisfactory answer in the past even though conventional direct positive slide making was often used in our dental photography department at the University of Manitoba Faculty of Dentistry. The quality of the results from the direct positive developing technique is excellent but it requires different chemicals, films and developing time which are deterrents to the average practitioner. Therefore, I decided to look for another method which would satisfy the dentist without the described disadvantages. This led me to experiment with Kodak RP/D X-omat duplicating film.

RP/D film can be used as a direct contact copying film for all dental radiographs as well as for making black and white slides. Not only does it possess fine tonal variation and brilliance, but it can be developed equally well by hand or by machine into positive transparencies. No special chemicals are needed and the developing time in both cases is not more than four minutes. The only requirements are a 35 mm reflex camera with a bellows extension or a set of automatic tube extensions, a photoflood or movie lamp light source, an x-ray view box, a tripod or stand and a marked cutter.

Technique

Preparation of the film — The commonest form of the RP/D film sheet is 8 x 10 inches. This must be cut on the marked cutter into 33 mm ribbon under the normal safe light of the dark room. The ribbon is then cut into 2 inch lengths and placed in a light-tight container. Utmost care should be taken not to contaminate the centre of the film pieces because fingerprints cause undesirable marks. A dental assistant could cut a two — three months' supply of film at a time. It is advisable to store the film with its emulsion surface facing down.

Loading the camera — The cut film is loaded by opening the back of the empty camera and placing the film in position above the shutter curtain. It must cover the full opening and the emulsion should face the lens. After closing the camera back carefully the film will be kept in place by the pressure plate. Timing should be set to "B" (bulb) on the camera for long exposure. It is advisable to use a cable release. The camera is now ready for the actual picture taking.

Picture taking — Although a slide could be made of any subject, the slow sensitivity of the emulsion makes the film impractical for living subjects. Fortunately, the territory of clinical intra-oral and patient photography is well covered by conventional colour films. But there are at least four subjects where colour is a waste and duplicating film is an excellent substitute. They are: plaster cast photography, panoramic and occlusal radiographs



Fig 1 Direct positive black and white slides produced from x-ray duplicating film.

to be reduced to 35 mm slides, instrument and tray setups, and graphs and illustrations from books to be converted into projectable 35 mm black and white slides.

Plaster casts — These are usually white or yellow and have a high light reflecting quality. The best result is obtained by using a single movie light about four feet from the cast and a piece of aluminum foil as a reflector to light up the shadow area. To gain a necessary depth of field the lens should be pre-set to $f:4$. Magnification can be obtained by using extension tubes or bellows. The exposure time is about 30 seconds. Correct exposure is obtained by trial and error. Light to subject distance has to be standardized.

Radiographs — Most dental radiographs fortunately fall into the 35 mm size and only mounting is required in order to use them as projection material. Panoramic and occlusal plate radiographs have to be reduced, however. In this case the x-ray view box is the light source. The original film is placed on the view box which is either horizontal or vertical depending on the use of a camera stand or tripod. Extension tubes or bellows are essential to achieve reduction. In dealing with flat objects, the lens could be used fully open or only one stop reduced in order to speed up exposure. The test exposure should be around 10 seconds.

Instruments and tray set-ups — It is necessary to diminish excessive highlights when photographing instruments and tray set-ups. This is achieved by using a Fiberglas diffuser or cheese cloth in front of the light source. If cheese cloth is used, attention must be paid to the heat generated by the

lamp in order to prevent ignition of the material. Accordingly, the diffuser cloth could be close to the subject and far from the lamp, the only criterion being that it should not be in view. Exposure time will vary greatly according to the light reflection value of the subject. It is a good guess to start at 20 seconds on the minimum stop-down that the depth of field allows. Trial and error are used until conditions are well established.

Illustrative material — Slides from graphic illustrations, line work or even half-tone pictures can be obtained with relative ease. When dealing with flat objects, there is no need for large f stop reductions. Good illumination can be obtained by using a single source of light disposed at an angle of approximately 45 degrees. The light source should be placed at a distance to assure even illumination of the page. The RP/D has great latitude and therefore the exposure time is not too critical. One may use a wrist watch or just count for exposure time.

Developing — The film is developed like any other x-ray film. Contrast can be increased in hand developing by extending the developing time and by agitating the film.

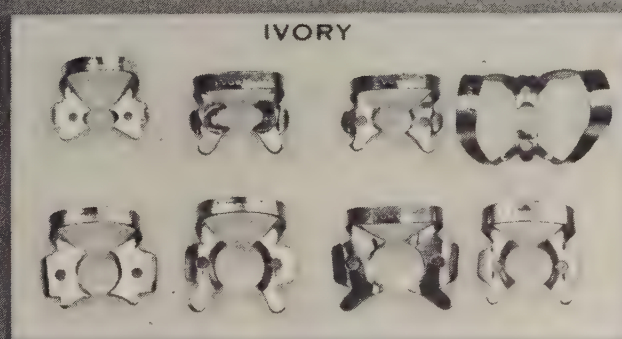
If there is doubt about the correct exposure, several films may be exposed and developed simultaneously to save time. Since the RP/D is a positive film, a dark slide indicates inadequate lighting and vice versa. The maximum time required to produce a black and white slide from start to finish should not exceed 10 minutes.

Advantages

Direct positive black and white slides greatly extend dental communication without any elaborate preparation, costly equipment, lengthy time requirement or special skills. The dentist is fortunate in having ready access to dark room facilities. The costs are negligible; 50 sheets of 8 x 10 inch duplicating film cost less than \$30 and even with loss one can obtain at least 10 good slides per sheet. If we take into consideration the "time gain," the advantages greatly outnumber the disadvantages. This method makes the dentist-photographer independent by eliminating the long waiting periods when using commercial photographic laboratories. By using his own creativity, with this simple aid he can communicate his achievements to his colleagues in the service of better dental health.

Mr. Domokos is head photographer at the Faculty of Dentistry, University of Manitoba, 780 Bannatyne Ave, Winnipeg R3E 0W3.

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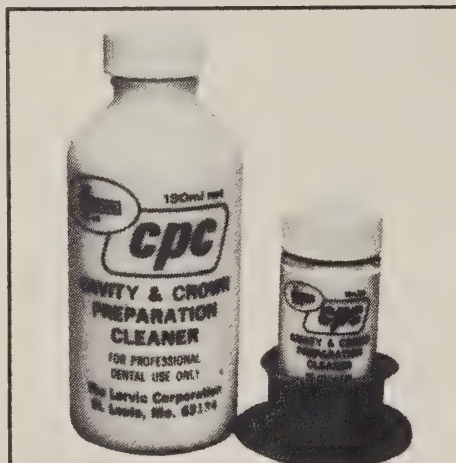
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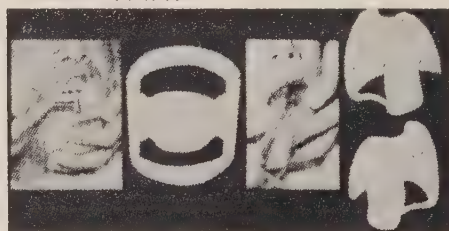
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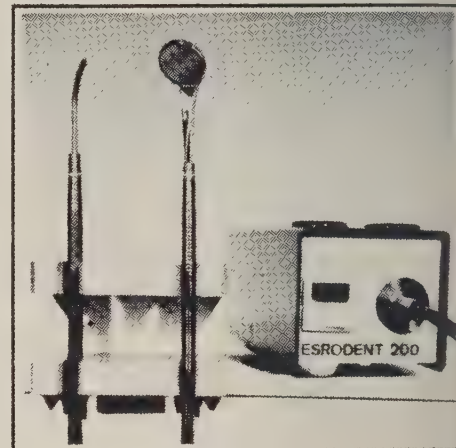
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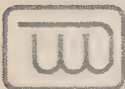
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ONTARIO — Dental Office for lease. Separate building, modern office in prosperous Southern Ontario, serving a large surrounding area. Two operatories, lab., dark room, reception area and business office all fully furnished and equipped — full basement. Building is fully air conditioned, sidewalk electrically heated. Contact Mrs. A. N. Van Loon, 7 Hyman St., Tillsonburg, Ont. phone (519) 842-4914.

QUEBEC — For sale complete five room office — 2 chairs; one a lounge chair. Equipment in good condition, with X-ray, air-rotor, compressor, three dental cabinets, 2 sterilizers, all instruments and supplies. No opposition. Rent \$95.00 per month. Retiring due to ill health. Asking price only \$1500.00. Write Dr. H. R. Ironstone, 33 Richelieu Street, Noranda, Quebec.

QUEBEC — Montréal. Secteur nord de la ville, cabinet dentaire établi depuis vingt ans dans clinique médicale assurant renouvellement de clientèle. Deux salles opératoires complètement équipées, plus bureau meublé prix à discuter. Répondre à CDA Box No. 1256.

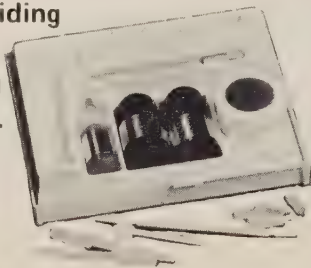
SASKATCHEWAN — Established practice available: Take over balance of M.D.S. lease of equipment and furniture. Well laid out office, two operatories, private office, laboratory, X-ray, large reception area carpeted. Situated 140 miles east of Regina in Potash Mining area. Qualifies for \$5000. — grant from Provincial Government. Reply CDA Box No. 1257.

SASKATCHEWAN — Busy general practice with two Weber units, one S.S. Whik unit, two X-ray units for sale in medical clinic. Leased through M.D.S. Very little financial outlay required. Situated 70 miles southeast of Saskatoon. Nearest dentist 50 miles. Eligible for provincial grant of \$5000. Reply CDA Box No. 1255.



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PLACE: Inn On The Park —
Toronto

The program will include discussion of concepts of occlusion, occlusal adjustment techniques, relationship to T.M.J. disorders, significance of mobility and relationship to prosthetic design.

The clinical approach to the subject matter will be stressed.

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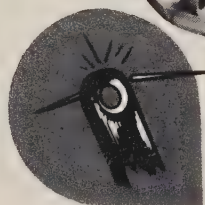
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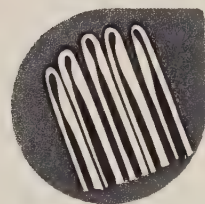
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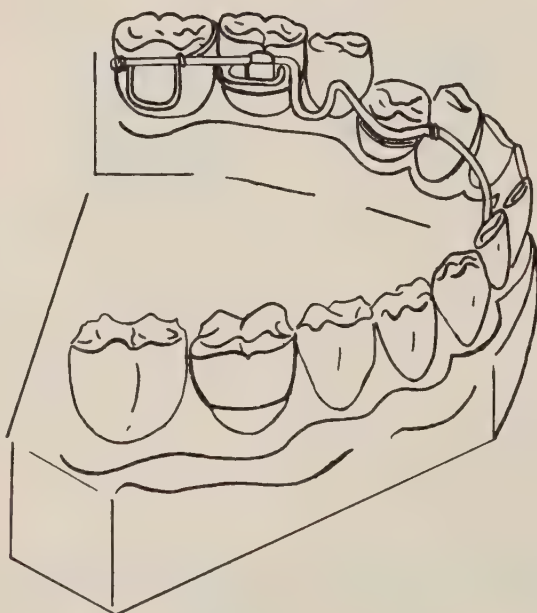
BRITISH COLUMBIA — Dentist required to take over busy Campbell River, Vancouver Island practice on a percentage basis for the months of July and August. Modern two chair office; rubber dam sit down dentistry, two chairside assistants; common receptionist and waiting room shared with another Dentist. Principle to be off for medical reason. Reply CDA Box No. 1262.

BRITISH COLUMBIA — North East. Associate, locum required for period June 18 — August 11, 1973 in area close to the Rockies. First class fishing and hunting available. Generous remuneration. Write Box 958, Fort Nelson, B.C. or phone 774-6444 (days) or 774-2684 (evenings).

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MANITOBA — The NDEB of Canada solicits applications for a half time Registrar. Applicants must possess a degree in Dentistry, some experience in administration. Residence in Ottawa. Apply the Registrar, Dr. D. Proctor, 780 Bannatyne Ave., Winnipeg, Manitoba R3E 0W2.

MANITOBA — Winnipeg. Dental hygienist for modern, established, preventive-oriented group practice; full 5-day week if possible, starting March 1, 1973. Apply to C. Fenn, 704 Osborne Street, Winnipeg, Man R3L 2B9.

MANITOBA — Dentist wanted to replace associate leaving to take a speciality. Exceptionally busy modern office in downtown Winnipeg area, fully equipped operatories. Three dentists and one hygienist on staff. Reply CDA Box No. 1267.

MANITOBA — Flin Flon. Associate wanted to join 3-man dental group in northern Manitoba. Associate would be full time in large branch practice. Good for recent graduate. High potential. Contact Dr. M. T. Crozier, Box 637 Flin Flon, Manitoba.

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ONTARIO — Associate wanted for general practice. Opportunity available immediately, private use of 2 fully equipped operatories. Do your own thing. Reply CDA Box No. 1252.

ONTARIO — London. FULL TIME ASSOCIATE for busy two dentists — 4 chair dental clinic in West London to start May or June 1973. High gross — fully diversified practice. If personality and views are in accord, the associateship could develop into a future combined expansion programme. Reply CDA Box No. 1249.

ONTARIO — Associate wanted to replace one dentist in a busy well-established three dentist group. Located 12 miles east of Metro Toronto. Present dentist returning to postgraduate studies in Sept. 1973. Reply CDA Box No. 1251.

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ONTARIO — Associate in Hamilton. Owner leaving country for two years. Office and equipment less than one year old. Excellent staff will remain. Family practice, emphasis on ortho, preventive and perio. Contact: Dr. D. J. Somer, 75 Wendover Dr. Hamilton, Ontario, phone (416) 389-6611.

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SASKATCHEWAN — Excellent opportunity available for Dentist wishing to establish a lucrative practice in well established Medical Centre in Saskatchewan City. For further information please contact CDA Box No. 1264.

SASKATCHEWAN — Rosetown. An immediate opening is available for an associate to join a busy general practice. High annual gross and excellent percentage will be arranged. Fully modern office with six operatories, modern equipment and air conditioned. Contact Dr. Stan Dovich, Box 1240, Rosetown, Sask. phone 882-2123.

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MONTREAL — Dental Hygienist required for group practice in Montreal. Reply CDA Box 1265.

OPPORTUNITIES WANTED

ASSOCIATESHIP wanted in British Columbia. DDS (Toronto) BDS. Preferably outside Vancouver area, but anywhere in B.C. will be considered. May-June 1973. Would also consider taking a practice on a temporary basis or even buy a practice after fair trial. Reply CDA Box No. 1263.

DENTIST, 2 years experience, desires full or part-time associateship in Halifax area. Available in June. Please reply CDA Box No. 1259.

ONTARIO — Toronto area. Busy progressive dentist 20 years general practice experience, University of Toronto graduate wishes to locate in Toronto area for personal reasons. Will consider partnership, association or take over practice while owner on course or retiring. Please reply CDA Box No. 1245.

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IMPORTANT: This form is to be completed by those desiring advance registration and accommodation in Vancouver during the forthcoming convention. Please mail the completed form, and, where applicable, your cheque for \$45.00, to the CONVENTION BUREAU at the above address. **To receive your choice of accommodation, register early! Preregistrations will not be accepted after the end of August 1973.** After August 31, please make your accommodation arrangements directly with the hotel of your choice, and register at the

convention registration facilities in Hotel Vancouver, upon your arrival. The general scientific sessions will be at both Hotel Vancouver and the Hyatt Regency Vancouver. The commercial exhibits and most section meetings will be in the Hyatt. Registration facilities, ticket sales, and most major social functions will be in Hotel Vancouver. These two headquarters hotels are very close to one another, on diagonally opposite sides of the same intersection.

Please PRINT or TYPE requested information:

DATE: _____

NAME: _____ If wife attending, name: _____
 surname given names

ADDRESS: _____

Executive or honorary status in provincial, state, national, or international organizations,

Specify: _____

Group affiliation: (e.g. CDA Section (specify), or Exhibitors)

Please indicate first, second and third choice of hotel accommodation in column entitled Choices.

CHOICES

- # _____ Hotel Vancouver
_____ Hyatt Regency Vancouver
_____ Hotel Georgia
_____ Bayshore Inn
☐ Accommodation not required

- ☐ Single
☐ Double Bed
☐ Twin Bed
☐ Suite (Specify Type)

ARRIVAL DATE _____

TIME _____

DEPARTURE DATE _____

TIME _____

NOTE: Hotels will not normally hold a room beyond 6 p.m. unless a later time is specified.

The registration fee for dentists is \$45.00. Dentists' wives may register without charge, as may exhibitors. Make your cheque payable to CDA National Conventions.

361

Français au verso

INSCRIPTION

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Du 14 au 17 oct., 1973

CANADIAN DENTAL ASSOCIATION / L'ASSOCIATION DENTAIRE CANADIENNE

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IMPORTANT: Cette formule doit être remplie par tous ceux qui désirent s'inscrire à l'avance et retenir une chambre pour le prochain Congrès qui aura lieu à Vancouver. Veuillez retourner cette formule dûment complétée ainsi qu'un chèque de \$45.00, au BUREAU DU CONGRÈS, à l'adresse ci-dessus. **Les meilleures chambres iront aux premiers inscrits! Les inscriptions prioritaires ne seront pas acceptées après août 1973.** A partir du 31 août, vous devrez faire vos réservations directement avec l'hôtel de votre choix et vous inscrire aux

guichets d'inscription du Congrès, à l'Hôtel Vancouver, à votre arrivée. Les séances scientifiques générales auront lieu à l'Hôtel Vancouver et à l'hôtel Hyatt Regency Vancouver. Les expositions commerciales et la plupart des réunions des sections auront lieu à l'hôtel Hyatt. Les Bureaux d'inscription, les ventes de billets et la plupart des fonctions sociales importantes auront lieu à l'Hôtel Vancouver. Ces deux hôtels qui serviront de centre principal sont très près l'un de l'autre, soit en diagonale en face de la même intersection.

Veuillez écrire en LETTRES MOULÉES:

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_____ Hôtel Georgia
_____ Bayshore Inn
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Heure: _____
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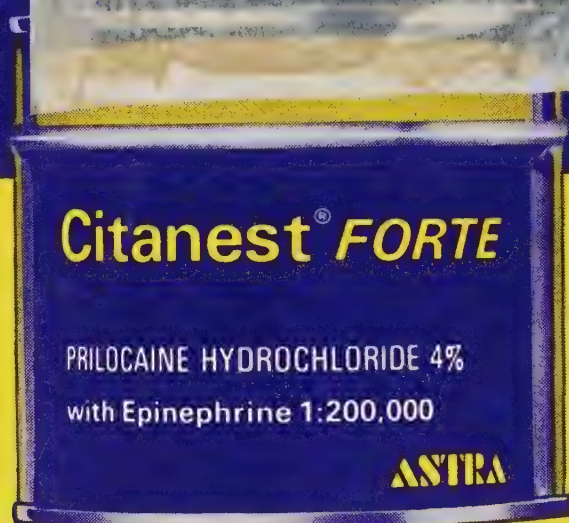
Division of Carter-Wallace N.S. Inc.,
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1. Studies on file, Carter-Wallace, Inc.

2. Council on Dental Therapeutics: Abrasivity of Current Dentifrices, JADA 81:1177, 1970.

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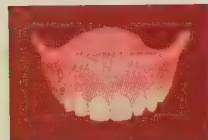
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June/Juin 1973/Volume 39/No 6

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orthodontic procedure using a Malocclusion
Treatment Severity Index

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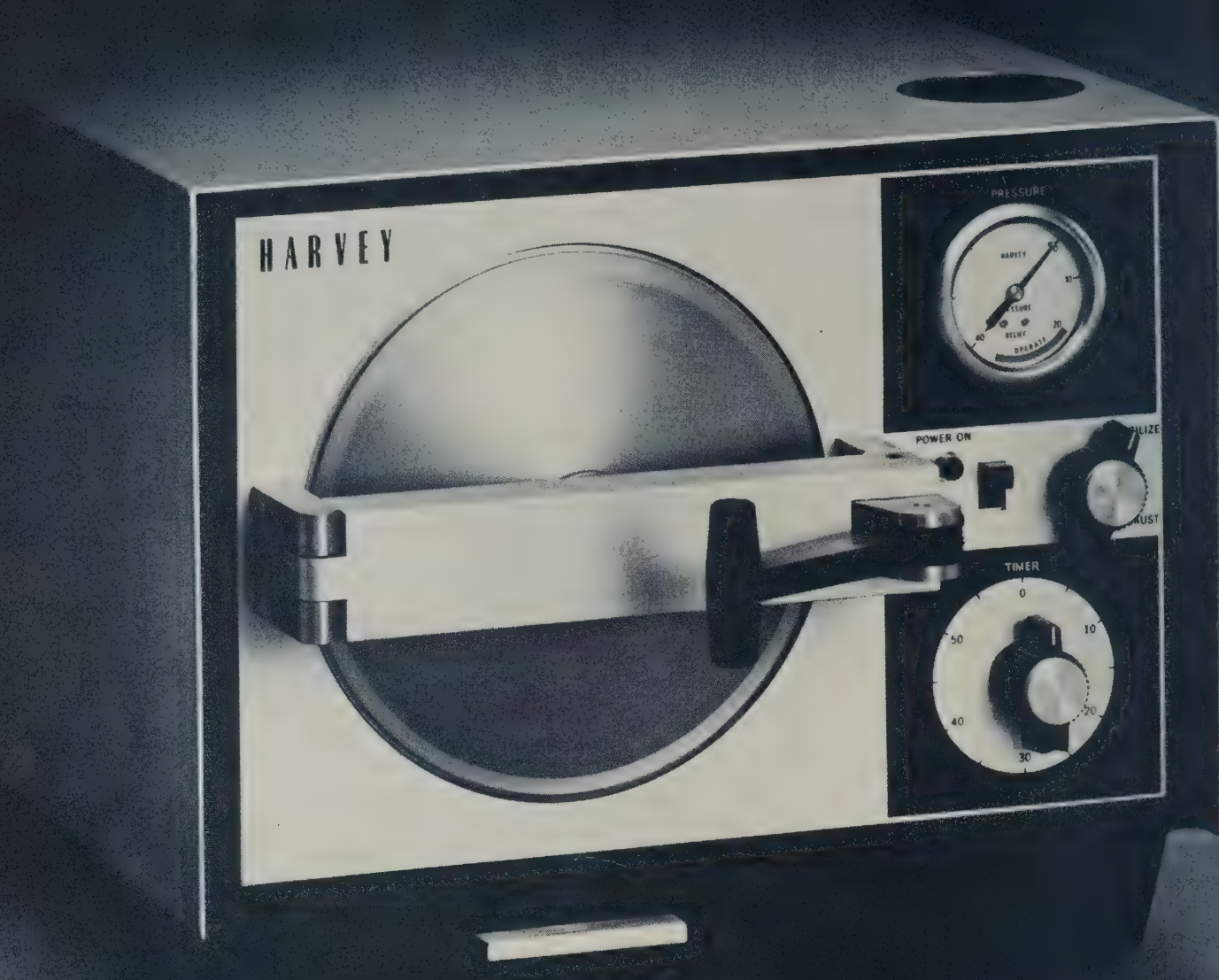
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La direction du Journal ne partage pas nécessairement les opinions qu'expriment ses collaborateurs à moins que l'Association Dentaire Canadienne ne les ait adoptées officiellement.



sterilize (ster' i-liz). To render sterile;
to free from microorganisms.¹

1. Dorland's Illustrated Medical Dictionary
W.B. Saunders Company 24th Edition 1965



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Announcements/Avis

Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont, Oct 2-5
1975 St. John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1973 Sydney, Australia, July 15-20
1974 London, England, Sept 8-14
1975 Chicago, USA, Oct 26-30

Canadian Meetings

Western Canada Dental Society, at Winnipeg. June 27-30, 1973. J. P. Beattie, 308 Kennedy St, Winnipeg 2, Man.

Dental Hygiene Section, Western Canada Dental Convention, at Winnipeg Inn, Winnipeg. June 30, 1973. Mrs. Vivian Burdenium, 2 Peel Cres, Winnipeg, Man.

Northern Ontario Dental Association, at Kirkland Lake, Ont. Sept 7-9, 1973. J. R. Brookfield, 2 Second St, Kirkland Lake, Ont.

Atlantic Provinces Dental Convention, at Charlottetown, PEI. Sept 16-19, 1973. S. G. Bagnall, PO Box 604, Halifax, NS.

Canadian Society of Oral Surgeons, at Mont-Gabriel Lodge, Mont Gabriel, Que. Oct 7-9, 1973. Pierre Surprenant, Suite 201, 230 King St W, Sherbrooke, Que.

Canadian Academy of Periodontology, at Vancouver. Oct 12-13, 1973. J. D. Stewart, 311 Rubidge St, Peterborough, Ont K9J 3P3.

Canadian Academy of Restorative Dentistry, at Vancouver. Oct 12-13, 1973. E. V. Gowda, Suite 201, 1590 Bellevue Ave, West Vancouver, BC.

Canadian Academy of Prosthodontics, at Vancouver. Oct 13, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Canadian Association of Orthodontists, at Vancouver. Oct 13-15, 1973. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K 3M4.

Canadian Academy of Endodontics, at Vancouver. Oct 14-15, 1973. P. R. Dow, Suite 1009, 925 W Georgia St, Vancouver 1, BC.

Canadian Society of Public Health Dentists, at Vancouver. Oct 14-17, 1973. J. M. Conchie, 14265-56th Ave, Surrey, BC.

Canadian Dental Hygienists Association, at Vancouver. Oct 14-18, 1973. Linda J. Hunter, 3350 Cedar Crescent, Vancouver 9, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Newfoundland Dental Association, at Holiday Inn, St. John's, Nfld. Nov 7-10, 1973. Gordon Anthony, PO Box 9505, St. John's, Nfld.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

Vancouver & District Dental Society, at Hotel Vancouver, Vancouver. Dec 7-8, 1973. Vancouver & District Dental Society, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Winter Medical-Dental Assembly, at Mont Gabriel, Que. Mar 2-9, 1974. A. T. Wachna, 504 Medical Arts Bldg, Windsor 14, Ont.

Les Journées Dentaires du Québec, à l'Hôtel Bonaventure, Montréal. 1-3 mai 1974. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. May 1-3, 1974. Mr. Bastien, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Hyatt Regency, Vancouver. May 1-4, 1974. College of Dental Surgeons of BC, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Ontario Chapter, Canadian Society of Dentistry for Children, at Four Seasons Sheraton Hotel, Toronto. May 12, 1974. A. F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 12-15, 1974. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont.

Alberta Dental Association, at Palliser Hotel, Calgary. May 29-31, 1974. J. R. Duncan, 306, 1711 - 4th St SW, Calgary, Alta.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R. C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor, Ont. Oct 2-5, 1974. J. M. Conchie, 14265 - 56th Ave, Surrey, BC.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

International Meetings

International Symposium on Biological Medicine, at Lausanne, Switzerland. June 20-24, 1973. III International Symposium on Biological Medicine, chemin du Frêne 11, CH-1004 Lausanne, Switzerland.

American Dental Society of Europe, at Lucerne, Switzerland. July 1-4, 1973. James Page, 65 Mount Ephraim, Tunbridge Wells, England.

4e Congrès International de Pédodontie, à Paris. 10-13 juillet 1973. Secrétariat Société Française de Pédodontie, 33 rue Poissonnière, Paris 2e, France.

Australian Society of Endodontology, at Sebel Town House, Sydney, Australia. July 12-13, 1973. E. H. Ryan, 185 Elizabeth St, Sydney, 2000, Australia.

International Implant Congress, at Sydney, Australia. July 12-14, 1973. T. T. Vajda, PO Box 1478, GPO Sydney, NSW, Australia, 2001.

International Association of Oral Surgeons, at Sydney, Australia. July 14-20, 1973. Sir Terence Ward, Royal College of Surgeons of England, 35/43 Lincoln's Inn Fields, London, WC2A 3PN, England.

Fédération Dentaire Internationale and Australian Dental Congress, at Sydney, Australia. July 15-20, 1973. G. H. Leatherman, 64 Wimpole St, London W 1M 8 AL, England.

Congress of the European Organization for Caries Research, at Zurich, Switzerland. July 20-22, 1973. G. Guggenheim, PO Box 138, CH-8028, Zurich, Switzerland.

Rhodesian Dental Congress, at Victoria Falls, Rhodesia. July 31-Aug 3, 1973. A. G. Winchester, PO Box 1367, Salisbury, Rhodesia.

Third International Orthodontic Congress, at Royal Festival Hall, London, England. Aug 13-18, 1973. W. J. Tulley, 43 Charles St, London W1X 7PB, England.

Iranian Dental Association, at Tehran, Iran. Sept 11-14, 1973. Iranian Dental Association, 82 Hafez Ave, Tehran, Iran.

New Zealand Dental Association, at Queenstown, NZ. Sept 20-22, 1973. Alastair Murray, 69 Don St, Invercargill, NZ.

Japanese Association for Dental Science, at Tokyo. Sept 22-26, 1973. J. Okamura, c/o Nippon Dental College, Fujimi, 1-Chome Chiyoda-ku, Tokyo, Japan.

First French Congress of Stomatology and Maxillofacial Surgery, at Paris. Sept 27-29, 1973. Secretariat Mme Palaysi Institut de Stomatologie, 47 blvd de l'Hôpital, 75013 Paris, France.

Portuguese Congress of Stomatology, at Lisbon, Portugal. Oct 17-20, 1973. Secretaria Geral do VI Congresso Português de Estomatologia, Av. R. Amélia 36-R/C, Dtº, Lisboa -5, Portugal.

International Symposium on the Immunoglobulin A System, at University of Alabama, Birmingham. Oct 23-25, 1973. F. W. Kraus, Box 103, University Station, Birmingham, Ala 35294, USA.

American Academy of Periodontology, at San Antonio, Texas. Oct 24-27, 1973. American Academy of Periodontology, Room 924, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Argentine-Brazilian-Uruguayan Dental Congress, at Buenos Aires. Oct 28-31, 1973. S. A. Coninter, Reconquista 533, Buenos Aires, Argentina.

American Dental Association, at Houston, Texas. Oct 28-Nov 1, 1973. C. G. Watson, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Association of American Women Dentists, at Houston Oaks Hotel, Houston, Texas. Oct 30, 1973. Hazel F. Haughey, Cold Brook Rd, Wilmington, Vermont 05363, USA.

Association Dentaire Française, à Parc des Expositions, Porte de Versailles, Paris. 13-18 nov 1973. Jacques Charon, 22 avenue de Villiers, 75-Paris 17ème, France.

American Institute of Oral Biology, at Spa Hotel, Palm Springs, Calif. Nov 16-20, 1973. Membership Chairman, PO Box 897, Glendora, Calif 91740, USA.

Associação Paulista de Cirurgiões Dentistas, at Sao Paulo, Brazil. Jan 20-25, 1974. Dr. R. Todescan, 389 Bela Vista, Caixa Postal 2523-01321, Sao Paulo, Brazil.

German Dental Congress, at Hamburg, Germany. Apr 15-28, 1974. Bundesverband der Deutschen Zahnärzte e.V., 5 Köln 41, Postfach 410168, Germany.

International Conference on Oral Surgery, at Madrid, Spain. Apr 21-25, 1974. International Conference on Oral Surgery, PO Box 46078, Madrid, Spain.

International Congress on Dentistry for the Handicapped, at Amsterdam, Holland. Apr 22-24, 1974. M. M. Album, Medical Arts Bldg, Hillside Ave and York Rd, Jenkintown, Pa 29046, USA.

New Zealand Dental Association, at Auckland. Aug 26-30, 1974. General Secretary, New Zealand Dental Association Properties Ltd, PO Box 28084, Auckland 5, NZ.

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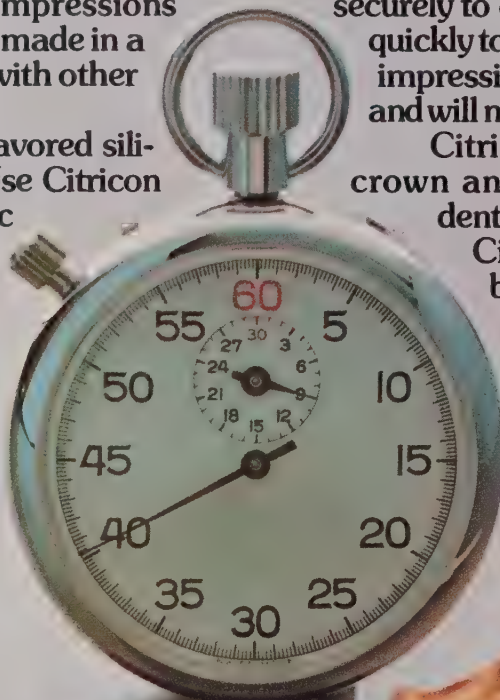
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The journal devotes this section to comments by readers on topics of current interest to dentistry. The editor reserves the right to edit all communications to fit available space. Printed communications do not necessarily reflect the opinion or official policy of the Canadian Dental Association. Your participation in this section is invited.

Cette partie du Journal est consacrée aux communications des lecteurs sur les questions d'actualité dentaire. La rédaction se réserve le droit d'adapter les communications à l'espace disponible. Les communications publiées ne représentent pas forcément l'opinion ou la politique officielle de l'Association dentaire canadienne. Vous êtes invités à participer à cette section du Journal.

Variables affecting behaviour

The article "A Cross-validation of Variables Affecting Children's Cooperative Behaviour" in the April issue of the Journal, though nicely presented, complete with current jargon, tells us nothing new; nothing any third year dental student would not have learned in paedodontics.

I feel that to publish such a paper in a serious journal demeans the publication and adds to the waste paper explosion. The popular press is the place for such material. I hope you will exercise your right to edit in the future and save us from such frivolous pedantry.

*Bernard Spring, DDS
1428 Ouellette Ave
Windsor, Ont*

Dr. Spring's comments are probably true for "some" dentists. It is unfortunate, however, that he took time to read the article and missed its intention.

Since 1960 behavioural science research has been increasing in the field

of paedodontics. This research has been investigating earlier clinical observations, questioning current practices, and attempting to find new methods to improve the delivery of dental care to children. If this research is to be of practical value, it should be cross-validated. Its information should serve as a basis for study in the future. In fact, now that the basis has been established, another article will soon be published (in the *Journal of Dentistry for Children*) which will deal with the manipulation of one of the variables.

Hopefully, this type of research will lead to changes which will help to create a more widespread positive attitude toward dentistry in our future generations. What practising dentist can quarrel with this general aim?

I only hope Dr. Spring will bear with us and recognize the practical suggestions when they are made. The third year dental student should also have learned that advances in practice and research are developed by building small portions of information upon existing knowledge. Objective observations are not sufficient to serve as a basis for further experimentation.

*Gerald Z. Wright, DDS, MSD
Faculty of Dentistry
University of Western Ontario
London, Ont*

National headquarters in Ottawa

As a member of the Canadian Dental Association I must register a protest over the CDA's intention to build a national headquarters in Ottawa.

While it is true that professional prestige requires a national headquarters, I am not so sure that now is the time.

Today our profession faces the challenge of illegal mechanics and unsupervised New Zealand-type auxiliaries. The provincial governments, which are largely responsible for dental health care, are closely watching these

developments. The federal government, however, will have nothing to do with the laws controlling these paraprofessionals. Correct me if I am wrong, but should the emphasis not be on locating close to and educating the governments who will be involved with these laws?

The Canadian Dental Association has existed for some years now, but when has it taken the leadership in rallying dentistry to fight these issues? When the illegal mechanics crawled into the open in British Columbia, did the Canadian Dental Association fight them? When this menace to the profession spread eastward, where was the warning from our national body?

Even now this national body does not sound one word of encouragement for the fight which Nova Scotia, Newfoundland, Quebec and Ontario wage; nor does it spread news of how we fare in other provinces where the first round was lost.

The struggle continues and our financial resources are stretched to the limit educating both legislators and the public while simultaneously counteracting the misinformation and outright lies spread by enemies of dentistry.

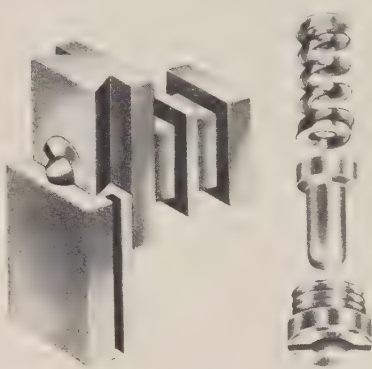
Why then, at this crucial time, do we even consider wasting our resources on a useless edifice which is nowhere near any government body which directly affects our professional life?

The proposed method of financing this new building has not been fully explained. If the Canadian Dental Association proposes to borrow funds from the CFDE Capital Fund (albeit at going interest rates) why not just say so and have done with it? Many of us, myself included, have given to the fund in any case: but to assail us with a plea for funds supposedly to further dental education when, in fact, it seems to be a building fund is not being fair or honest with the membership.

In closing, I ask only this of my confrères outside of Toronto and in all other parts of Canada: do not let your traditional mistrust of "hometown" stampede you into making a hasty and, at this point in time, disastrous move. Much more information is required

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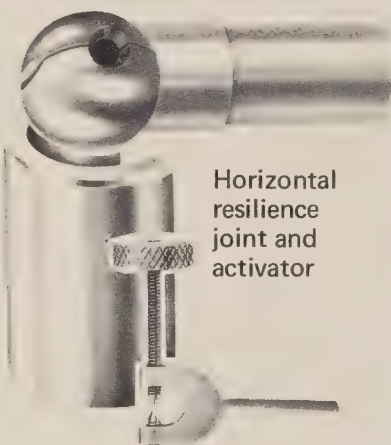
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before we venture to undertake this program.

Certainly at some time in the near future, after carefully considering *all* the possible alternatives, we should make the move to establish a new national headquarters. But now is not the time. In this instance, he who hesitates is right!

*P. W. Markle, DDS
4235 Sheppard Ave East
Agincourt, Ont*

Dr. Markle's first point appears to be that, because the implementation of health legislation is largely provincial and that significant dental issues are now being considered by provincial governments, there is no need for the profession to be active at the federal level.

To be responsible to its members and to the public it serves the dental profession, I believe, has the responsibility of being active in all of the local, provincial and federal environments. All are important because no one dental organization can be effective in each of these administrative jurisdictions. The CDA therefore supports the need for strong provincial dental associations as it does for a strong national association.

While the challenges of illegal mechanics and dental services by unsupervised auxiliaries call for the profession's soundest judgment and greatest strength in the provincial arena, one must have his head in the sand not to see that the Ottawa contingent of ministers, deputy ministers and legislators are also interested in these developments and that they wield a great deal of influence provincially by personal contact, by federal provincial conferences and (heaven forbid) by fiscal arrangements.

Moreover, there are other important issues affecting the dental profession and its future that should not be left unattended while we argue the pros and cons of dental mechanics. Just a few such issues include: special interests of dentists with regard to the Income Tax Act; sales taxes and import duties; health manpower; Canadian Health Standards Council; the profession's liaison with the Department of

National Health and Welfare, its health programs and Health Protection Branch; the Competition Act; statistics of dental practice, etc., etc.

So often the dental profession has been left out of national considerations until after the fact, largely because it has not regularly been on the Ottawa scene. The Task Force on the cost of health services, the Task Force to study community health centres and the first Task Force to study the possibilities of a Health Accreditation Co-ordinating Council are recent examples of such oversight.

The Canadian Medical Association, the Canadian Public Health Association and the Canadian Pharmaceutical Association are other national health associations which have recently decided that the best interests of their members are more likely to be served by having an Ottawa address. Surely the dental profession is not so different; it, too, has a lot to gain by being where its action truly is.

Having stated that all the important dental issues are provincial ones, it is strange that Dr. Markle then goes on to criticize the CDA for not being of assistance to the provinces as they attempt to deal with current concerns. Obviously, he is not aware of the activities of the Board of Governors over the years and its continued efforts to stimulate concerted action and to offer its assistance. To cite only a few examples:

(1) The CDA Secretary's report to the Board of Governors published in the 1959 CDA *Transactions*, pages 12 and 13, contains the following paragraphs:

"Since the preparation of my report a considerable number of events have occurred in respect to the 'denturist' problem mainly in the four western provinces. Evidence exists that this matter will reach a very critical stage during the next succeeding months. Up until the present time, action on the part of the profession has been purely negative. The time has arrived when constructive action is essential.

"Basically the problem has two aspects. First, lack of dental service, particularly in rural areas. Secondly, the matter of costs of prosthetic services. Arguments respecting other phases of dental practice are of little account in making presentations before governmental committees. Ways and

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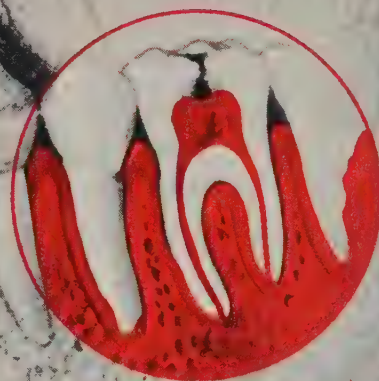
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Control Group (no antibiotic)	100	49
150 mg q.i.d. for 3 days before surgery	25	0
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1. de Vries, J., et al. (1972). J. Canad. Dent. Assn., No. 2, p. 63.



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Average infections: 10 mg/kg/day (5 mg/lb/day) divided into three or four equal doses.

Severe infections: 16 mg/kg/day (8 mg/lb/day) or more if indicated by the clinical situation, divided into three or four equal doses.

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Severe infections: 20 mg/kg/day (10 mg/lb/day) or more divided into three or four equal doses.

Absorption of Dalacin C is not appreciably modified by ingestion of food and Dalacin C may be taken with meals with no significant reduction of the serum level.

Note: With β -haemolytic streptococcal infections, treatment should continue for at least 10 days to diminish the likelihood of subsequent rheumatic fever or glomerulonephritis.

Cautions: Generally well tolerated. Usual antibiotic side effects — abdominal discomfort, loose stools or diarrhoea, nausea, vomiting. Transient neutropenia (leukopenia), or abnormalities in liver function tests have been observed in a few instances. Mild hypersensitivity reactions (skin rash and urticaria) have been observed on rare occasions.

Use with caution in patients with a history of asthma and other allergies. As with other antibiotics, periodic liver function tests and blood counts should be performed during prolonged therapy.

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means of meeting these problems should be a chief concern of this annual meeting.

"It is known that communications on this matter are taking place between the respective governments. This matter is rapidly spreading from one legislature to another.

"Apparently many dentists with cursory knowledge of this matter refer to it as involving 'dentures only.' This is a grave error. The important consideration is the principle involved. The principle as stated in the CDA Policy Statement on Auxiliary Personnel reads as follows: 'the best interests of the public demand that dental care be provided under the responsibility of the one group of persons qualified by education, licensure and experience to have full regard for the dental and total health of the patient. This best interest of the public will not be served by fractionating this responsibility of the dental profession for this can lead only to a lowering of the standard of service to the patient.'

"Hardly necessary is it to state that once this principle is broken through the way is open for other auxiliary personnel to break away from dental practice, e.g. the dental nurse. The principle is common to other health services. Adherence to the principle is essential but finding ways and means of saving the principle and yet solving the problem is mandatory upon the profession.

"It must be recognized that a position will have to be taken on this immediate problem. Direction and guidance should be forthcoming from this meeting."

(2) CDA has, over the years, supplied information and advice to all provinces requesting assistance. Headquarters staff have personally visited the various provinces for discussion or to assist with presentations to governments.

(3) In 1965 the Board of Governors set up a special committee to study the services of dental technicians. One of the committee's recommendations, to be found on page 9 of the CDA *Transactions*, says: "that the CDA recommend that each corporate member establish an adequate complete denture service to meet the needs of the low-income segment of the population and prevent the inroads of illegal operators on services best pro-

vided by trained professional personnel."

(4) In 1967 and again in 1968, the CDA sponsored national dental laboratory technicians' conferences at headquarters. Representatives from all provinces were invited and the reports of both conferences appear in the 1967 and 1968 *Transactions*. The main purpose of the conferences was to study ways of improving cooperation between the dental profession and technicians and to study the effects of dental mechanics legislation on the industry.

(5) The CDA was the original instigator of the Wells Ad Hoc Committee on Dental Auxiliaries. The formation and purpose of such a committee was recommended in the CDA's statement on the Report of the Royal Commission on Health Services.

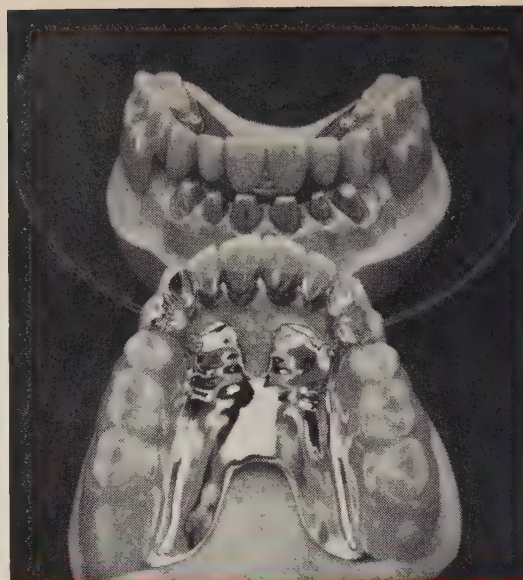
(6) CDA had a news release on dental technologists ready for distribution at the time of the Board of Governors meeting in Ottawa, 1971. It supported the recommendations of the Wells Ad Hoc Committee with respect to dental technologists. Ontario governors persuaded the CDA Board not to release the statement because it might complicate negotiations in Ontario. Other provinces wanted the release but the Ontario viewpoint prevailed. The CDA statement was therefore not released until the ODA, the RCDS and the governing Board of Dental Technicians in Ontario gave their statements to the press on December 16, 1971.

(7) On request, the CDA submitted a brief on the Denturologist Act to the government of the Province of Quebec. This brief was made available to anyone requesting it.

(8) In 1968 the CDA presented a model dental health plan for children. It was the first such model to be produced in Canada.

(9) The CDA has provided extensive information to the corporate member in Saskatchewan in connection with the proposed children's program in that province. It also submitted a brief at the invitation of the College of Dental Surgeons of Saskatchewan to the provincial advisory committee established to study the various proposals with regard to a children's dental health plan.

(Continued on page 381)



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Are these the activities of an association that is failing its members? I think not!

The CDA has always felt the responsibility of a leadership role and has tried to live up to that responsibility. However, some provinces have not wanted suggestions from the national association and have therefore not cooperated with it – to everyone's disadvantage.

If a "home" for the CDA that its members can be proud of, a "home" that is situated in a location which will permit the most effective service to its members, a "home" that will allow the staff to work most efficiently is, as Dr. Markle describes it, a "useless edifice" then perhaps the CDA should be allowed to fade into oblivion. The members of the CDA Board of Governors, and most corporate members, must have thought differently when they directed that an effort be made to bring about the move as early as possible. This decision was taken

by the Board at the annual meeting in early June, 1972.

Dr. Markle's suggestion that something is dishonest or unfair concerning the proposed financing of the new headquarters is difficult to understand. A healthy CFDE Capital Fund to which donations are tax deductible will provide for the Fund a substantial annual income in perpetuity which must be spent for the benefit of dental education and research as required by the original deed of trust.

The CDA will have to borrow money if it is to proceed with the new building. Should it be able to borrow from the Capital Fund at going rates of interest, the Fund will have its annual revenue and the CDA will have the dollars to proceed with the building. Instead of CDA paying interest to a bank or mortgage company it would be paying interest to the Fund which in turn spends the money on teacher training fellowships, educational conferences, etc. What is so unfair or dishonest about this?

Dr. Markle concludes his letter by saying "now is not the time." I wonder if he realizes that the Ottawa property must be returned to the National Capital Commission if it is not used for the purpose for which it was purchased within three years; that building costs are escalating at a rate of about 10 per cent per year and there is no evidence of a slowdown in this trend; and that dentistry is losing out in its federal contacts and areas of influence every day that CDA headquarters is not where it ought to be.

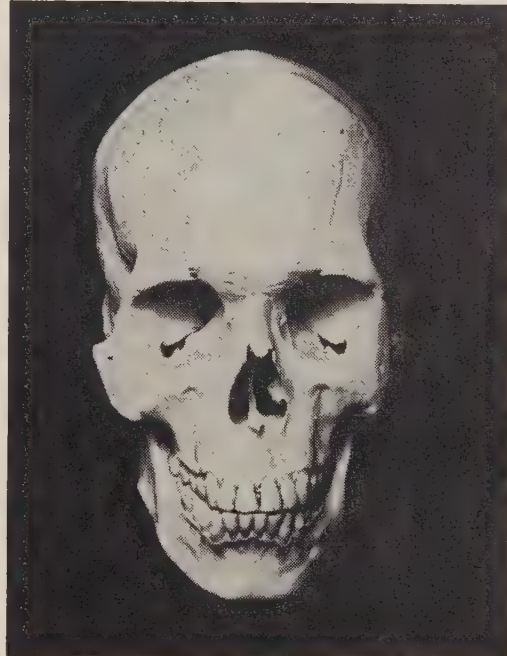
Moreover, if we lose the Alta Vista property we may never again have an opportunity to buy land in Ottawa at such a favourable price and in such a desirable location. We now have a substantial investment (\$100,000) for land, architect's drawings, etc that is not producing any return – and will not produce any return until we proceed. If now is not the time, when is it?

David Peters, DDS
President
Canadian Dental Association



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☞ The scientific content is assembled by the CDA, which has appointed Dr. G. S. Beagrie as editor. Dr. Beagrie is assistant director of post-graduate dental education at the University of Toronto, and is supported in his editorship by a CDA advisory committee.

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Government dental services

Already there are two schools for dental nurse therapists in Canada — one in Saskatchewan, the other in the Northwest Territories. The advent of these therapists, largely as the result of government investigation, implies the growing role that organized dental services will take in Canadian dental health. If such a role is to be expanded — and it is not the purpose of this letter to argue the merits of such a scheme — then increasing numbers of public health dental officers will be needed in the supervising and management roles.

The present situation of dentists in the public service is pitiful. There is no adequate career structure such as might attract a fair share of the best dental surgeons being graduated in Canada. Recently some young dentists have been attracted to enter the public service, either at the provincial level or with the Department of National Health and Welfare. However, personal experience has shown that these dentists do not stay in the service very long but leave embittered and disillusioned, often after only a few months. It is pertinent to ask why.

The structure of public dental services, particularly with the federal government, is such that dentists are considered a minor offshoot of medical services — in reality a paramedical technician. It is of note that all service management positions in the Department of National Health and Welfare are held by physicians who thus determine all policy and management including dental services. It is our experience that although the dentists are consulted on dental matters, such advice as is given is ignored. This situation must be changed if any development of public dental services is to take place.

The Canadian Dental Association and its affiliate bodies must urge all government agencies involved in the health field to set up autonomous dental services responsible only at the ministerial level. A proper career structure, with a minimum of five steps, will be essential to attract the best men. Salaries must be comparable to other senior executives in the government. Dental surgeons must be equally involved in management and all health policy decisions.

At the present time we would not personally recommend any graduate dentists to consider government services under the present conditions beyond a limited time to satisfy missionary or adventurous ideals in the remote parts of this country.

M.E.J. Curzon

M.A.A. Levesque

B. B. Bourne

Eastman Dental Centre

800 Main St E

Rochester, NY

Les services dentaires gouvernementaux

Les gouvernements de la Saskatchewan et des Territoires du Nord-Ouest ont récemment ouvert deux écoles pour la formation de thérapeutes dentaires.

L'arrivée de ces nouveaux auxiliaires fait ressortir le rôle grandissant que les services dentaires bien structurés devront jouer dans le maintien de la santé buccale au Canada.

Il n'est pas question de prendre position pour ou contre l'organisation de tels services, de mettre en évidence le fait que l'état aura besoin d'un plus grand nombre de dentistes pour assurer la direction

et le contrôle de ces nouveaux auxiliaires. Or il faut bien l'avouer la situation des dentistes oeuvrant dans le secteur public, particulièrement au niveau fédéral, est pitoyable et n'est pas de nature à attirer dans les services gouvernementaux une juste part des meilleurs éléments qui graduent de nos universités.

Récemment un certain nombre de dentistes ont été recrutés par le Ministère fédéral de la Santé et du bien-être social, souvent par des promesses qui ne se sont jamais réalisées. Ces dentistes toutefois, selon notre expérience personnelle, ont quitté le service public après quelques mois, aigris et désillusionnés. Il est donc pertinent de se demander pourquoi?

(Suite à la page 386)



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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

President Peters speaks out against "denturists"

On May 3, Dr. David Peters, president of the Canadian Dental Association, appeared before a Select Committee of the Newfoundland government's House of Assembly. This committee has been conducting hearings and receiving briefs as one phase of an inquiry into the possibility of "denturists" supplying prosthetic dental services to the people of the province.

In appearing before the Select Committee, Dr. Peters shouldered a dual responsibility. He presented a brief and spoke on behalf of the Newfoundland Licensing Board, of which he is registrar, and also on behalf of the Canadian Dental Association.

In the concluding paragraphs of the brief, Dr. Peters stated: "... in considering denturists and related matters, two points only are significant: (1) whether or not there is a need for an additional category of dental personnel to provide a denture service only, and (2) whether or not those calling themselves 'denturists' are qualified to fulfil this need. Both these points, we submit, have not been proven to be so."

The brief also called for an enforcement of the 1968 Newfoundland Dental Act as a means of protecting the Islanders from those who hold no recognized training in the practice of any branch of dental surgery.

Proposed dental plan for the children of Saskatchewan

As previously reported to members, the CDA submitted a brief to the Saskatchewan Advisory Committee set up to consider the Public Health Department's proposal for a dental plan for the children of that province. Among the Association's recommendations to the Advisory Committee was one which strongly supported the need for "effective supervision" by dentists of the services provided by qualified dental auxiliaries. The fact that this particular recommendation has had some effect was made apparent by a subsequent letter from the Advisory Committee asking for further explanation of the meaning of the term "effective supervision" and a request from the College of Dental Surgeons of Saskatchewan that the term be elaborated in a letter to the Honourable W. E. Smishek, minister of public health in Saskatchewan.

Both requests were answered on behalf of the Association by using a definition of "effective supervision" which was approved by the Executive Council at its meeting in April. The definition will be presented to the Board of Governors for official sanction at the annual meeting in Vancouver. It reads as follows:

"Implicit in the interpretation of the meaning of effective supervision by a dentist of the services of allied dental health personnel is the requirement on

Executive Director's Page

(from page 385)

the dentist to assume *ultimate responsibility* for the nature, extent and quality of the dental care or service received by his patient. More specifically:

1. The dentist will be responsible for delineating the scope of services the allied personnel will perform.

2. The dentist will be responsible for assuring that the allied personnel have the training, knowledge and ability effectively to perform the duties he has delegated, such duties being those not requiring the full knowledge and skill of the licensed dentist.

3. The dentist will be responsible for assuring himself that the duties assigned have been competently and correctly discharged.

4. The allied dental health worker who renders services directly for the patient will perform his or

her duties within the same accommodation as that occupied by the dentist and normally, as well, when the dentist is present."

Premier A. E. Blakeney of Saskatchewan talks with dentists

During the annual convention of the College of Dental Surgeons of Saskatchewan held in Regina May 3 to 6, 1973, President Peters and I, in the company of Dr. Ron Hill, president of the College and Dr. Fred Wihak, the College's CDA Board and Executive Council member, had the privilege of meeting with Premier Blakeney.

Provision of dental services to the children of the province and fluoridation of the province's communal water supplies were among the topics discussed.

Although the Advisory Committee's report has now been presented to the Honourable W. E. Smishek, the provincial government had, at the time of writing this report, taken no further steps to define the dental plan it hopes to introduce for the children of Saskatchewan.

Dialogue

(from page 383)

Nous croyons que la grande raison de ces départs réside dans le fait que la structure même des services dentaires, particulièrement au niveau fédéral, est telle que les dentistes sont considérés comme jouant un rôle très mineur dans les services médicaux: en réalité le dentiste n'est qu'un technicien paramédical.

En effet, il faut bien noter que tous les postes de direction au ministère fédéral de la Santé sont détenus par des médecins qui déterminent toutes les politiques, y compris celles des services dentaires. Même si certains de nos confrères sont consultés sur des questions qui regardent la dentisterie, leur avis est le plus souvent ignoré.

Cette situation doit être changée si le gouvernement désire réellement que les services dentaires se développent adéquatement.

L'Association dentaire canadienne et ses corps affiliés doivent faire pression sur toutes les agences

gouvernementales oeuvrant dans le domaine de la santé afin qu'elles établissent un service de soins dentaires autonome, responsable seulement au niveau ministériel.

De plus, le gouvernement devra offrir une rémunération et des bénéfices sociaux comparables à ceux que reçoivent les fonctionnaires seniors au niveau de la direction. Enfin il serait normal que les dentistes soient sérieusement consultés lors de l'élaboration de politiques générales de santé.

Pour conclure, disons que nous ne pourrions recommander à nos confrères d'entrer au service du gouvernement dans les conditions actuelles, à moins que ce ne soit pour satisfaire pendant une période limitée, leur esprit missionnaire ou leur goût d'aventures dans les coins les plus reculés du pays.

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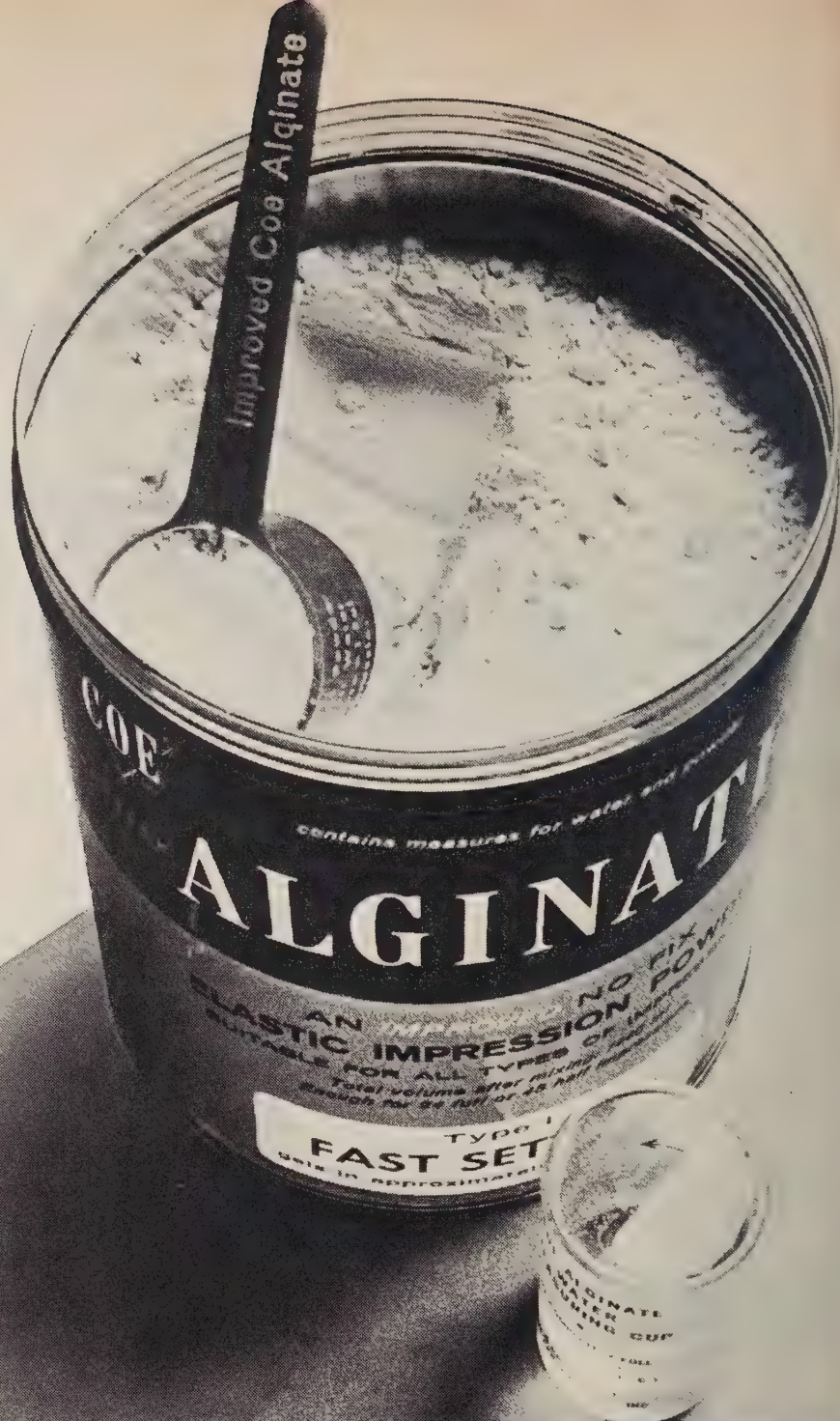
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The Association

Dr. Grainger appointed editor of CDA Journal

Dr. Robert M. Grainger has been appointed editor of the *Journal of the Canadian Dental Association*. He will join the Association's headquarters staff on July 1, 1973.



R. M. GRAINGER

Dr. Grainger is presently research director for the Association of Medical Colleges in Ottawa, a post he has held since 1969.

In 1968, he was appointed associate director for extramural programs at the National Institute of Dental Research, part of the US Department of Health and Welfare's National Institutes of Health in Bethesda, Maryland. Prior to this, Dr. Grainger was head of the dental clinic at the University of British Columbia where he taught and conducted research in epidemiology and computer applications. From 1958 until 1967 he was professor of epidemiology and chairman of the Research Division at the University of Toronto.

Always active in dental affairs, Dr. Grainger chaired a Canadian government subcommittee responsible for gathering dental health statistics and maintaining a national dental health index. His international work includes serving as chairman of a committee on design and analysis of clinical trials and heading a World Health Organization panel that is developing a system of dental epidemiology. In the United States, he served on two National Institutes of Health advisory groups, the Dental Program Project Committee and the Dental Study Section, in addition to being a consultant to the Food and Drug Administration and the National Center for Health Statistics.

Author of more than 55 papers, monographs and manuals, Dr. Grainger is a 1943 dental graduate of the University of Toronto. He also holds a graduate degree in dental public health and an MScD in epidemiology from the same university.

When he takes up his new post at the national association, Dr. Grainger will divide his time between the Journal department and the CDA Bureau of Dental Statistics.

Council on Education recommends recognition of two new specialties

The CDA Council on Education will recommend to the Board of Governors that approval be given for recognition of dental public health and oral radiology as specialties.

Applications for specialty recognition in these two areas of dentistry were considered by council during its three day meeting at headquarters, April 30 to May 2, 1973. It was decided that the applications made on behalf of dental public health and oral radiology met all six criteria recited in the "Requirements for Approval of a Special Area of Dental Practice."

The Council on Education also decided to disband its Committee on Specialties which was appointed last year to consider and make recommendations on applications for new specialties. The council based its decision on the belief that matters with respect to recognition of specialties require the full council's attention.

Another major resolution arising from the meeting involves a new definition of prosthodontics which incorporates restorative dentistry. The council agreed to recommend to the Board of Governors approval of the following amended definition:

"Prosthodontics is that branch of dentistry pertaining to the restoration and maintenance of oral function, comfort, appearance and health of the patient by the restoration of the natural teeth and the replacement of missing teeth and contiguous tissues with artificial substitutes.

"A prosthodontist is a dentist who is specially trained in prosthodontics by advanced education, training and clinical experience.

"There are three main areas in prosthodontics, namely: removable prosthodontics, restorative dentistry (operative dentistry and fixed prosthodontics) and maxillofacial prosthodontics.

"Therefore, prosthodontics is concerned with:

- (1) providing suitable substitutes for the coronal portion of teeth;
- (2) the replacement of missing teeth and oral structures;
- (3) correlating the masticatory surfaces to achieve normal function;
- (4) the prosthodontic treatment of patients who have incurred oral facial deformities.

"These services may include other adjunctive treatments necessary for the proper completion and maintenance of such restorations."

1973 annual meeting of CDA Board of Governors

The 1973 annual meeting of the Board of Governors of the Canadian Dental Association will be held October 11-13 at the Hotel Vancouver in Vancouver, BC. The meeting is open to all members of the Association.

The national convention of the Canadian Dental Association begins on Sunday evening, October 14, and continues through Wednesday, October 17.

Council on Communications stresses cooperation with corporate members

The relationship between the Canadian Dental Association and its corporate members with regard to public relations and information programs was a top priority item on the agenda for the April 25 meeting of the CDA Council on Communications.

In drafting one of the major resolutions of the meeting, the council stressed the importance of establishing a close working relationship with the corporate members in an effort to enhance dentistry's public relations programs on a provincial, as well as a national basis. Council resolved "that close cooperation be established between the CDA Bureau of Public Information and the public information officers of the corporate members" and "that the main purpose of this cooperation be to provide opportunity for the Association to supplement the provincial public relations programs when this is determined to be advantageous."

In order to implement this resolution, the Council on Communications directed that the following steps be taken:

(1) The CDA public information officer will communicate with his various provincial counterparts to determine: the nature and scope of their present information programs; the areas in which they would like to establish public relations programs; and the areas in which they would like assistance from the CDA's Bureau of Public Information.

(2) On the basis of his communication with provincial representatives, the CDA public information officer will identify the areas in which it appears the national association could be most helpful.

(3) He will then design a national public relations program that will meet the general requirements of the profession across Canada.

(4) He will also discuss public relations problems which are specific to individual provinces with the people directly concerned and, where possible, offer his assistance.

(5) After defining which areas have national significance and which are provincial in nature, the CDA Bureau of Public Information will consider

plans for the organization of a National Communications Conference to investigate further ways to upgrade public relations throughout the dental profession in Canada.

Awards and Appointments

Western to confer honorary degree on Dr. Don Gullett

Dr. Don W. Gullett, Toronto, will receive an honorary doctor of law degree from the University of Western Ontario on June 8, 1973. He is among nine prominent Canadians representing various professions and disciplines who will be honoured during the University's 214th convocation to be held in London, Ontario, June 5 to 8.



D. W. GULLETT

The degree is being awarded in recognition of Dr. Gullett's major role in the internal growth and development of the Canadian dental profession.

Dr. Gullett graduated from the University of Toronto's Faculty of Dentistry in 1923 and remained in private practice until 1940. He then became involved in dental administration full-time and was instrumental in organizing the internal workings of the profession and in bringing about its high standards of practice.

He served as secretary of the Canadian Dental Association from 1942 to 1964 and has held executive posts in

the major administrative bodies of dentistry, including a 17 year term as registrar-secretary of the Royal College of Dental Surgeons of Ontario and a 10 year term, from 1957 to 1967, as Special Adviser on Dentistry to the World Health Organization.

Dr. Gullett has been honoured internationally and has received many awards, including the Coronation Medal, 1953, the William J. Gies Award of the American College of Dentists, 1962, the Distinguished Service Award in 1964 from the American Association of Dental Editors, the Centennial Medal in 1967, and in 1970 the Elmer S. Best Award from the Pierre Fauchard Academy.

Dr. Gullett has published more than 50 papers in dental journals and, after his retirement, wrote *A History of Dentistry in Canada*.

National Convention

Radiologist to speak at CDA national convention

Dr. Harry M. Worth, special lecturer in radiology at the Faculty of Dentistry, University of Toronto, will present a clinic entitled "Mechanisms of Disease of the Jaws as it May Concern Dentists and Their Radiologic Correlation" during the CDA national convention to be held in Vancouver, October 14 to 17, 1973.

Dr. Worth's presentation will include a brief description of the relevant anatomy of the bone and the changes that can take place in the tissues. He will focus on the consideration of important dental disease, describing the actual changes that take place, relating these changes with radiologic appearances. Also included will be a review of radiographic projection. Acute infection, chronic infection (which includes abscess formation) granuloma, cysts and periodontoclasia will be discussed, together with conditions which appear these or could be mistaken for

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⁽¹⁾ Wade, A. B.,
British Medical Journal,
Volume III, Number 8,
P. 280-285, 17/10/61.

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them. Among such conditions would be periapical osteofibrosis, fibrous dysplasia, histiocytosis X and tumours.

In addition to lecturing at the Faculty of Dentistry, Dr. Worth is consulting radiologist to the Hospital for Sick Children, Toronto. He is also a consultant to the Shaughnessy Hospital, Department of Veterans Affairs, Vancouver, BC, and the School of Dentistry, University of Washington in Seattle, Washington. Dr. Worth is a life member of the Canadian Association of Radiologists as well as a fellow of the Royal College of Physicians of Canada.

Prosthodontist to deal with Occlusion

Dr. Niles Guichet of Anaheim, California, will deal with the topic of "Modern Concepts of Occlusion" in his lecture during the scientific program of the CDA convention.

Dr. Guichet's presentation will emphasize how a knowledge of the principles of occlusion can be

applied with practice management concepts to increase productivity, secure better utilization of auxiliary personnel, do better dentistry, and build a practice. Use of instrumentation to obtain better laboratory work with improved dentist-laboratory relations will be explained. Typical work-flows and cost analysis of various methods of occlusal treatment will be discussed.

Dr. Guichet, diplomate of the American Board of Prosthodontics, is a member of the American Prosthodontic Society, American College of Prosthodontists, American Equilibration Society, Omicron Kappa Upsilon, Academy of General Dentistry, Western Society of Periodontology and an associate fellow of the Academy of Denture Prosthetics and a visiting professor at the University of Alabama. Dr. Guichet has spent the last four years in post-graduate education (presenting over 280 courses in principles of occlusion in the United States, Canada, Europe and the Orient) and in developing improved methods of occlusal treatment.

Fees and policy for registration

The Canadian Dental Association has finalized registration policy and fees for the national convention to be held in Vancouver, October 14-17.

Dentists registering for the general convention will be charged \$45. No additional charge will be made for wives taking part in the ladies' program. Accommodations are extra.

There will be no registration charge to CDA student members. Dental students who are not CDA members will pay a \$5 registration fee. This fee entitles them to receive all the benefits of CDA student membership for 1973-74.

Fluoridation

Peterborough to fluoridate in July

Following a favourable vote for fluoridation in Peterborough, Ont, last December, equipment is being installed and should be operative by July. The system will serve 56,000 people with fluoride-adjusted water supplies, according to a spokesman for the public utilities commission. Including Peterborough, fluoridation will be in effect for 19 of the 26 local municipalities in Ontario which have a population of 50,000 or more.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on April 30, 1973:

Guaranteed Fund \$10.133;

Fixed Income Fund \$13.946;

Common Stock Fund \$29.952.

Total assets (market value) of the plan were \$15,950,309.26.

The following portfolio purchases and sales occurred during the preceding month: bought \$35,000 Royal Trust Company GIR, 5,510 units CIF Conventional Mortgage Fund, 5,000 shares Cadillac Development Corp, 11,000 shares Markborough Properties and \$1½ million Consumers' Gas Co note; sold \$1½ million Royal Bank of Canada note.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Deaths

Bernbaum, Frank. 59. Saskatoon, Sask. University of Minnesota, 1938. 4-4-73. Survived by his wife and family.

La Fleche, J. Edouard. 72. Montréal. Université de Montréal, 1925. 4-4-73. Martin, Martin Gardner. 50. Rossland, BC. University of Oregon, 1949. 9-4-73.

O'Reilly, Vincent Basil. 68. Toronto. University of Toronto, 1931. 10-4-73. Survived by Durney and Terry (sons).

Porter, John F. 75. Toronto. Royal College of Dental Surgeons of Ontario, 1922. 4-4-73. Survived by Angela Kerr (wife); Mrs. Thomas D. Graham (daughter); and Miss Irene Porter (sister).

Sweetnam, John H. 55. Windsor, Ont. Loyola University, 1954. 26-3-73. Survived by Dr. and Mrs. Harry Sweetnam (parents).

Trotter, Trevor Cecil. 65. Toronto. University of Toronto, 1931. 9-4-73.

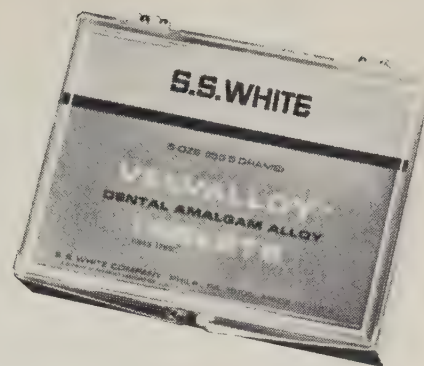
Waddell, John Calvin. 49. Calgary. McGill University, 1951. 25-4-73. Survived by Joyce Edith (wife); John (son); and Janice (daughter).

Walker, Thomas Mansfield. 50. Toronto. University of Toronto, 1945. 1-5-73. Survived by Shirley (wife); Peter (son); Jennifer and Deborah (daughters).

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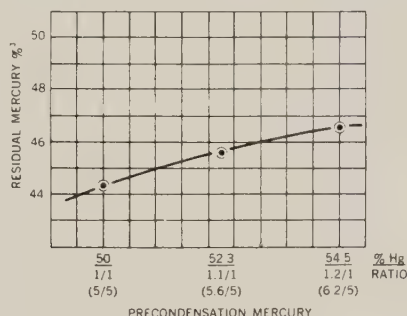
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- Excellent dimensional stability.
- High early strength.
- Great final strength.
- Ideal carving characteristics.
- Low precondensation mercury.



Velvalloy—a comprehensive look at its physical properties and characteristics.

Residual mercury² 44.5% at 1/1 ratio (see graph)

Precondensation mercury² 50 to 54.5% mercury; 52.3% ideal (see graph)



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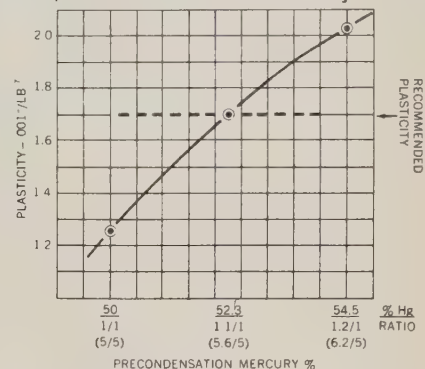
Dimensional change* 0 to +5 u/cm

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Instron testing machine, crosshead speed 0.02" min.
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1. This product appears on the American Dental Association List of Certified Materials.

2. Data offered as guidelines to Velvalloy's performance in a clinical application. Data derived from amalgam test specimens prepared under conditions of mercury-to-alloy ratio, trituration, and condensation recommended in the package directions and are representative of values which the dentist could reasonably expect to obtain.

3. Crawford, W. H., and Larson, J. H., Residual Mercury Determination Process, Journal of Dental Research, 34:313, 1955.*

4. A.D.A. Specification No. 1, Dental Amalgam Alloys.*

5. Mean ± 1 standard deviation. Two-thirds of experimental values fall within this range.

6. Mahler, D. B. and Van Eysden, J., Dynamic Creep of Dental Amalgam. Paper presented to

the Dental Materials Group, I.A.D.R. 46th Annual Meeting, 1968. San Francisco, California.*

7. Mahler, D. B., Plasticity of Amalgam Mixes, Journal of Dental Research, 46:708, July-August, 1967.*

*Data obtained using test methods described in the reference.

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INDICATIONS: Carbocaine (brand of mepivacaine) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS: Carbocaine is contraindicated in patients with a known hypersensitivity to the amide type local anesthetics or to methylparaben which is added to the multiple dose vial solutions.

WARNINGS: RESUSCITATIVE EQUIPMENT AND DRUGS SHOULD BE IMMEDIATELY AVAILABLE WHEN ANY LOCAL ANESTHETIC IS USED.

Usage in Pregnancy: Safe use of Carbocaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

Solutions containing a vasoconstrictor, particularly epinephrine or norepinephrine, should be used with extreme caution in patients receiving antidepressants of the triptyline or imipramine types or MAO inhibitors

because a severe prolonged hypertension may occur.

PRECAUTIONS: The safety and effectiveness of Carbocaine depend upon proper dosage, correct technique, adequate precautions, and readiness for emergencies.

The lowest dose that results in effective anesthesia should be used to avoid high plasma levels and serious undesirable systemic side effects. Injection of repeated doses of Carbocaine may cause significant increases in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slow metabolic degradation.

Tolerance varies with the status of the patient. Debilitated, elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their age and physical status.

Solutions containing a vasoconstrictor should be used cautiously in the presence of diseases which may adversely affect the patient's cardiovascular system. In persons

with known drug sensitivities or allergies Carbocaine should be used cautiously.

Serious cardiac arrhythmias may occur if preparation containing a vasoconstrictor are employed in patients dying or following the administration of chloroform, halothane, cyclopropane, trichloroethylene, or other related agents.

ADVERSE REACTIONS: Adverse reactions result from high plasma levels due to excessive dosage, rapid absorption or inadvertent intravascular injection. Hypersensitivity, idiosyncrasy, or diminished tolerance may also be the cause of reactions. Reactions due to overdosage (high plasma levels) are systemic and involve the central nervous system and the cardiovascular system.

Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may occur followed by drowsiness, convulsions, unconsciousness and possibly respiratory arrest.

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Carbocaine 3% adds this important dimension to patient comfort because it is fully effective by itself, without any help from a vasoconstrictor.

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brand of **mepivacaine HCl**
without vasoconstrictor

**The modern local anesthetic
adequately effective by itself**

Reactions involving the cardiovascular system include depression of the myocardium, hypotension, bradycardia, and even cardiac arrest. Treatment of a patient with toxic manifestations consists of maintaining an airway and supporting ventilation using oxygen, and assisted, or controlled respiration as required. Supportive therapy of the cardiovascular system consists of using vasopressors, preferably ephedrine. Convulsions may be controlled by the use of oxygen. If convulsions persist, the intravenous administration in small increments of an ultra short-acting barbiturate (i.e., thiopental, thiamylal) may be used. If these are not available, a short-acting barbiturate (secobarbital, pentobarbital) may be used. Intravenous barbiturates should only be used by those familiar with their use. Allergic reactions are characterized by cutaneous lesions of delayed onset, or urticaria, edema, and other manifestations of allergy. The detection of sensitivity by skin testing is of doubtful value.

DOSAGE AND ADMINISTRATION: As with all local anesthetics the dose varies and depends upon the area to be anesthetized, vascularity of the tissues, individual tolerance and the technique of anesthesia. The lowest dose needed to provide effective anesthesia should be administered. For specific techniques and procedures refer to standard dental manuals and textbooks.

For infiltration and block injections in the upper or lower jaw the average dose of 1 cartridge will usually suffice. Each cartridge contains 1.8 ml. (36 mg. of 2% or 54 mg. of 3%). This dose may be doubled if necessary to effect anesthesia. The maximum dose should not exceed 3.6 mg. per pound of body weight.

Any unused portion of a cartridge should be discarded.
HOW SUPPLIED: Carbocaine (brand of mepivacaine) HCl 3% without vasoconstrictor—each ml. contains: Carbocaine HCl, 30.0 mg.; sodium chloride 3.0 mg.; and water for injection. Methylparaben 1.0 mg. is added to the

solution and pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Carbocaine HCl 2% with Neo-Cobefrin (brand of levonordefrin) 1:20,000—each ml. contains: Carbocaine HCl 20.0 mg.; Neo-Cobefrin, 0.05 mg.; sodium chloride 4.0 mg.; acetone sodium bisulfite, not more than 2.0 mg.; and water for injection. Methylparaben 1.0 mg. and sodium lactate 1.0 mg. are added to the solution and the pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

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Suomi, J.D. et al.: J. Periodont. 42:152-160, March, 1971.

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Les actualités dentaires

L'Association

Enquête sur la recherche dentaire au Canada

Le Conseil de la recherche de l'Association dentaire canadienne a entrepris une enquête majeure afin d'établir l'état actuel de la recherche dentaire au Canada.

L'enquête est extrêmement importante. Le Conseil de la recherche se propose d'en utiliser les résultats en vue de négociations futures avec le gouvernement et les autres organismes qui exercent une influence sur la recherche dentaire au pays.

Les questionnaires ont été adressés à plusieurs personnes, à des institutions, aux universités et aux firmes industrielles, afin d'atteindre tous les chercheurs dans le domaine dentaire au pays.

Toutes les personnes qui dirigent des recherches dentaires ou buccales au Canada qui n'auraient pas reçu le questionnaire utilisé pour l'enquête sont priées de s'adresser au docteur A. P. Angelopoulos, président du Comité de l'ADC chargé de l'enquête sur la recherche dentaire au Canada, Faculté de dentisterie, Université Dalhousie, Halifax, NE.

Le Canada

Crédits pour le programme Médifacts au Manitoba

Lors d'une récente réunion, l'Association dentaire du Manitoba a approuvé une résolution en vue d'attribuer des crédits aux dentistes abonnés au programme d'éducation permanente de Médifacts, enregistré sur bandes ma-

gnétiques et patronné par l'ADC. Le nombre de crédits sera déterminé par le Bureau de direction de l'association.

Terre-Neuve inaugure sa première clinique de dentiers à frais modiques

L'Association dentaire de Terre-Neuve a inauguré sa première clinique de dentiers à frais modiques, c'est la première étape d'un programme qui s'étendra à toute la province.

La clinique de St-Jean, qui a ouvert ses portes récemment dans le centre-ville, dispose du personnel lui permettant de poursuivre ses activités cinq jours par semaine. Le service sera aussi disponible le soir si les demandes le justifient.

Les honoraires sont de \$60 à \$70 pour une prothèse alors que le tarif recommandé par l'association est de \$100.

Le docteur E.P. Cavanaugh de St-Jean, omnipraticien récemment retraité, est en charge de la clinique. L'association lui adjoindra d'autres dentistes qui acceptent d'offrir leur contribution partielle au programme.

La clinique ouvrit ses portes après que l'ADTN eût annoncé l'intention de fournir un service "permettant de sauvegarder la santé des citoyens" sans les obliger, pour des raisons d'économie, d'avoir recours directement à des techniciens dentaires.

Lors de l'annonce de l'instauration du programme de dentiers à frais modiques, les dirigeants de l'association ont déclaré que l'état précaire de la santé dentaire à Terre-Neuve "résultait surtout de la pauvreté économique et de la difficulté de distribuer les services

dans les districts isolés et à population clairsemée."

L'Association dentaire de Terre-Neuve a souligné que le gouvernement ainsi que la profession dentaire ont accordé dans la province la priorité à l'implantation d'un programme de soins dentaires pour les enfants, depuis quelques années.

"Maintenant que le programme pour les enfants est bien établi, la profession dentaire reconnaît l'existence du besoin de la population plus âgée, qui a perdu plusieurs ou toutes ses dents et qui réclame des dentiers partiels ou complets."

L'association a demandé au ministre de la Santé de Terre-Neuve d'établir un cours de trois ans sanctionné par un diplôme, afin de former des technologistes dentaires. La proposition mentionnait que ces technologistes seraient l'équivalent des thérapeutes dentaires projetés pour l'Ontario. Ils auraient la compétence nécessaire pour prendre les impressions et l'enregistrement de l'occlusion, fabriquer un dentier supérieur ou inférieur et l'ajuster, sous la surveillance du dentiste.

La chambre des députés de Terre-Neuve a annoncé la tenue d'enquêtes publiques dans toute la province et au Labrador afin de déterminer si les denturistes devraient être autorisés à servir directement le public.

Les enquêtes ont débuté à Corner Brook et doivent se poursuivre à St-Jean, au début d'avril.

L'économie

Création d'un comité consultatif sur la politique en nutrition

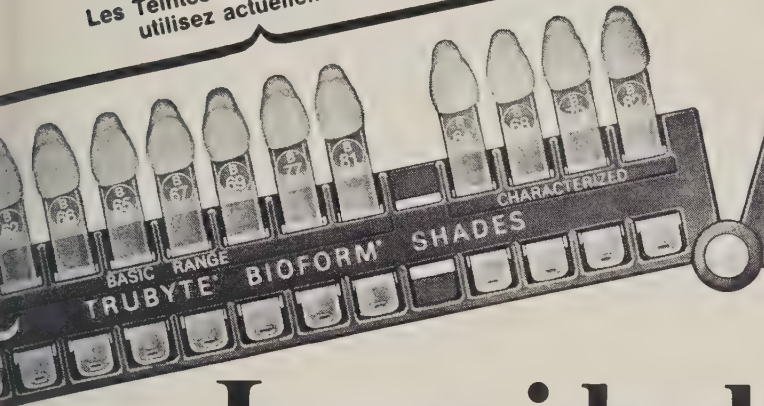
Le ministère des Affaires sociales vient de former un comité qui a pour mandat d'élaborer une politique en nutrition au Québec.

Ce comité étudiera plus précisément les implications de la nutrition et de l'alimentation sur l'état de santé des Québécois. Il devra, de plus, formuler des recommandations sur les politiques et les programmes à mettre en oeuvre dans ce domaine.

Comme base de travail, le comité se servira des résultats du rapport de l'organisme Nutrition-Canada et déterminera si les conclusions de ce rapport

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s'appliquent ou non aux problèmes relatifs à la nutrition au Québec.

Les travaux du comité ont débuté le 6 avril dernier et se poursuivront jusqu'à la fin de l'année 1973.

Un rapport comprenant les principaux éléments de la politique en nutrition sera remis au ministère des Affaires sociales au mois d'octobre 1973.

Deux premiers départements de santé communautaire en voie d'implantation

Les deux premiers départements de santé communautaire au Québec sont actuellement en voie d'implantation dans la région du Saguenay-Lac Saint-Jean.

La mise sur pied de ces deux départements marque le début d'une phase importante de l'application de la Loi sur les services de santé et les services sociaux, loi qui est entrée en vigueur en juillet dernier. Cette phase importante, c'est la prise en charge de la médecine préventive et de la protection de la santé publique par 31 centres hospitaliers désignés dans chacune des 12 régions administratives du Québec.

Une idée québécoise

La création des départements de santé communautaire au sein de ces centres hospitaliers constitue une idée tout à fait originale au Québec. C'est un comité, présidé par le docteur Corbett MacDonald, qui, à la suite des études de la commission Castonguay-Nepveu, recommandait de rendre un certain nombre d'hôpitaux responsables du maintien et de l'amélioration de la santé de groupes de population pouvant varier de cent mille à trois cent mille habitants, en plus des responsabilités d'hospitalisation qui leur sont confiées.

Les centres hospitaliers désignés pour organiser ces départements de santé communautaire auront notamment pour fonctions:

- d'assurer et de surveiller, dans leur territoire, la réalisation des programmes de soins préventifs essentiels destinés aux écoliers, aux mères enceintes, aux nourrissons et à la population en général en matière de dépistage, d'immunisation, de contrôle des maladies infectieuses et d'éducation sanitaire;

- de pourvoir au développement et à l'organisation de soins à domicile adaptés aux besoins de la population et des malades au sortir de l'hospitalisation;

- de mener des études sur les tendances des maladies au sein de la population et de développer des méthodes d'intervention susceptibles de les combattre et de les prévenir;

- de veiller au bon fonctionnement des consultations externes et des services d'urgence de manière à y assurer en tout temps la présence de professionnels aptes à fournir les soins requis dans ces services.

Partout où ils seront constitués, les départements de santé communautaire assumeront les responsabilités qui étaient jusqu'ici partagés entre les unités sanitaires, les infirmières affectées au réseau des écoles secondaires et des CEGEP et le Service de santé dentaire du ministère des Affaires sociales.

Une première réalisation

Les centres hospitaliers désignés au Saguenay-Lac Saint-Jean pour organiser de tels départements deviennent ainsi responsables de la médecine préventive et de la protection de la santé publique sur le territoire qui leur sera prochainement assigné.

Si le projet de découpage soumis par le ministère devait être accepté par le comité régional du Saguenay-Lac Saint-Jean qui vient de tenir sa première réunion, le département de santé communautaire de l'Hôpital de Chicoutimi desservirait, outre la population de Chicoutimi-Jonquière et des municipalités environnantes. Pour sa part, l'Hôtel-Dieu de Roberval desservirait, en plus de la population de Roberval, celle d'Alma, de Dolbeau, de Chibougamau et des municipalités situées sur le pourtour et à l'ouest du Lac St-Jean.

Le comité régional

Le comité régional d'implantation des départements de santé communautaire de la région du Saguenay-Lac Saint-Jean a pour mandat de:

- diffuser l'information requise auprès des groupes impliqués par la création des départements de santé communautaire;

- servir d'intermédiaire et de canal d'échange entre les groupes de travail par centre hospitalier et le groupe ministériel;

- identifier les problèmes pouvant surgir au cours des différentes phases de l'opération et les porter à la connaissance du groupe ministériel.

Il devra surtout, dans un premier temps, chercher à recruter deux candidats aptes à remplir les postes de chef de département des deux départements constitués dans cette région.

Le comité régional est formé des personnes suivantes: Monsieur Maurice Cardinal, de l'Hôtel-Dieu de Chicoutimi; Monsieur Gilles Dufault, du Conseil régional de la santé et des services sociaux; Monsieur Paul-André Garon, de l'Hôtel-Dieu de Roberval; le docteur Michel Marchand, du Service de santé dentaire du ministère des Affaires sociales; le docteur Gabriel Plamondon et le docteur Claire St-Pierre, des unités sanitaires de la région; le docteur François Tremblay, de l'Hôpital de Chicoutimi. Monsieur Maurice Beaulieu, de Dolbeau participera aux travaux du comité à titre de coordonnateur du ministère dans la région pour les services de santé. Le docteur Paul Pouliot, de Roberval, assistait également à la première rencontre.

Ajustement des frais d'hébergement dans les centres hospitaliers de soins prolongés

Les centres hospitaliers de soins prolongés devront ajuster les frais d'hébergement pour l'hospitalisation des malades en chambre privée, semi-privée ou ordinaire.

L'hébergement de malades en salle demeurera gratuit.

Cette modification aux règlements de l'assurance-hospitalisation, qui entre en vigueur aujourd'hui même, vise avant tout à diminuer l'écart entre les charges pour la clientèle des centres hospitaliers de soins prolongés et celles des foyers d'hébergement.

Depuis 1964, il s'agit du premier rajustement des taux pour l'hébergement dans les centres hospitaliers de soins prolongés. Les taux pour les centres hospitaliers de soins de courte durée avaient été ajustés en 1971.

Une autre modification aux règlements vient standardiser la définition des chambres dans un centre de soins prolongés, notamment en distinguant la chambre semi-privée, qui compte deux lits, et la chambre ordinaire, qui en compte trois ou quatre.

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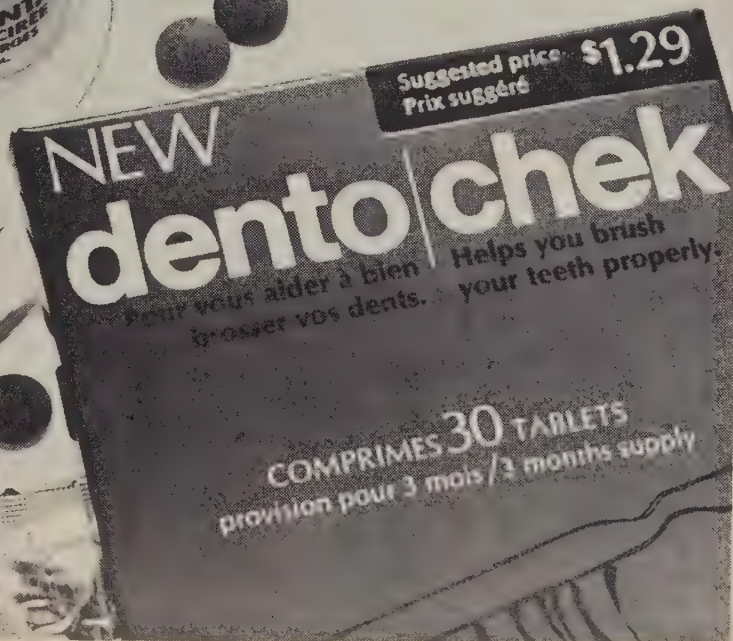
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En faisant part de ces modifications aux règlements de l'assurance-hospitalisation, le ministre des Affaires sociales, M. Claude Castonguay, a toutefois ajouté que son ministère étudiait actuellement des dispositions qui permettraient aux personnes hospitalisées dans un centre de soins prolongés d'obtenir une exonération en regard des charges prévues pour l'hébergement en autant qu'elles fassent la preuve de leur incapacité de payer de tels frais.

Les Québécois pourront recevoir partout les services assurés par l'Assurance-hospitalisation

Les Québécois pourront désormais recevoir hors du Canada tous les services assurés par l'assurance-hospitalisation du Québec dans les cas d'accidents, de maladie subite et de référence pour services ultraspecialisés non disponibles au Québec.

C'est ce qu'a déclaré récemment le ministre des Affaires sociales, M. Claude Castonguay, en annonçant que des modifications importantes venaient d'être apportées aux règlements de la Loi de l'assurance-hospitalisation.

La principale modification concerne précisément l'hospitalisation des québécois à l'étranger puisqu'elle autorise le ministre des Affaires sociales à payer 100 pour cent des frais alors que, précédemment, sa contribution ne pouvait dépasser \$25 par jour. Cette contribution sera toutefois maintenue à \$25 par jour dans le cas de Québécois qui se rendent à l'étranger pour recevoir des soins qu'ils pourraient tout aussi bien recevoir au Québec.

Voici le texte des règlements pour ce qui est de l'hospitalisation hors Canada:

"Lorsqu'un résident reçoit des services assurés dans un centre hospitalier situé hors Canada, le ministre, sur production d'une réclamation détaillée, doit rembourser à ce résident ou au centre hospitalier, le prix de ces services dans les cas suivants:

(a) lorsque ces services ont été reçus ou l'admission effectuée durant les 24 heures qui ont suivi un accident;

(b) lorsque ces services sont devenus nécessaires à cause d'une maladie subite ou d'une situation jugée urgente par le ministre;

(c) lorsque ces services ont été autorisés au préalable par le ministre sur la demande écrite signée par deux médecins alléguant la non-disponibilité au Québec de services diagnostiques ou thérapeutiques suffisamment spécialisés. Cette demande doit être accompagnée d'un résumé du dossier de la personne au bénéfice de qui cette autorisation est demandée."

Couverture interprovinciale

Les services assurés hors du Québec sur le territoire canadien font également l'objet d'une révision substantielle. Les résidents québécois pourront désormais recevoir partout au Canada les services assurés au Québec, sans restriction. Auparavant, dans les autres provinces, les services externes n'étaient assurés pour les québécois que dans les 24 heures suivant un accident.

En annonçant ces modifications, le ministre des Affaires sociales s'est déclaré très heureux de pouvoir ainsi mettre un terme aux inconvénients que devaient subir de nombreux québécois hospitalisés durant des vacances et des voyages d'affaires ou d'étude.

Les nouveaux règlements de l'assurance-hospitalisation entrent en vigueur aujourd'hui le 25 avril, jour de leur publication dans la *Gazette officielle du Québec*.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 avril 1973:

Fonds avec garantie \$10.133;

Fonds à revenu fixe \$13.946;

Fonds d'actions ordinaires \$29.952.

L'avoir total (valeur marchande) du régime se montait à \$15,950,309.26.

Au cours du mois précédent, les transactions ont été les suivantes: achat \$35,000 Royal Trust GIR, 5,510 CIF Convention Mortgage Fund units, 5,000 actions de Cadillac Development Corp,

11,000 actions de Markborough Properties et \$1½ million Consumers' Gas Co note; vente \$1½ million Royal Bank of Canada note.

Pour de plus amples renseignements, veuillez écrire à: CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

La recherche

La recherche concentre ses efforts sur les substituts du saccharose

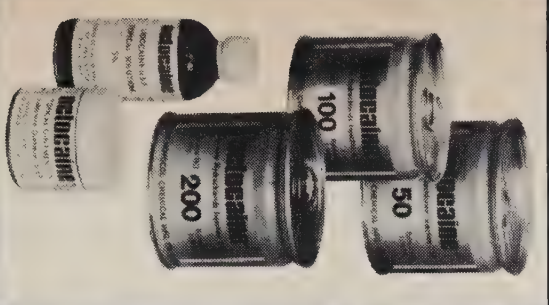
Comme partie intégrante de l'attaque intensive déclenchée contre la carie dentaire, l'Institut national de recherche dentaire du ministère de la Santé, de l'Education et du Bien-être des Etats-Unis, apporte son appui aux travaux entrepris pour découvrir un substitut inoffensif et agréable au goût pour remplacer le saccharose contenu dans les goûters et les desserts. Il est reconnu depuis longtemps que le saccharose, un aliment de choix des bactéries qui causent la carie, constitue l'une des principales substances qui favorisent la carie dentaire.

Les chercheurs, sous la direction du Dr Juan Navia, professeur à l'Ecole dentaire de l'Université d'Alabama, à Birmingham, étudieront l'effet de la substitution d'autres hydrates de carbone dans les goûters en vogue.

Les aliments seront tout d'abord mis à l'essai sur des rats conditionnés aux habitudes alimentaires humaines, c'est-à-dire à trois repas par jour plus trois ou quatre goûters entre les repas. Après 40 jours, les rats subiront des examens afin de déterminer les effets de cette alimentation sur la carie dentaire et les résultats seront comparés avec ceux d'un groupe de contrôle. Si les résultats sont satisfaisants, un programme d'études cliniques sera mis en oeuvre.

La concentration de la recherche sur les substituts du sucre constitue l'un des nombreux projets retenant les efforts de l'Institut national de la recherche dentaire pour combattre la carie dentaire. D'autres projets comportent aussi le contrôle bactérien et la protection par l'effet des fluorures.

materials? think Movobol. Buffalo



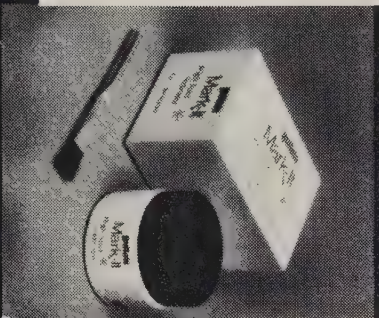
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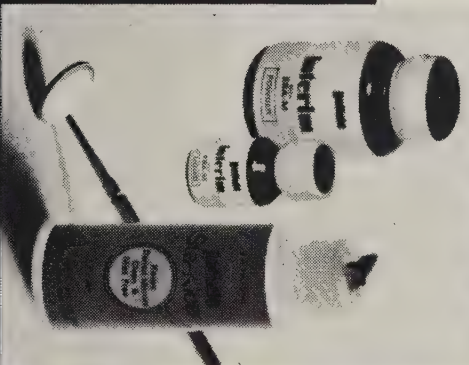
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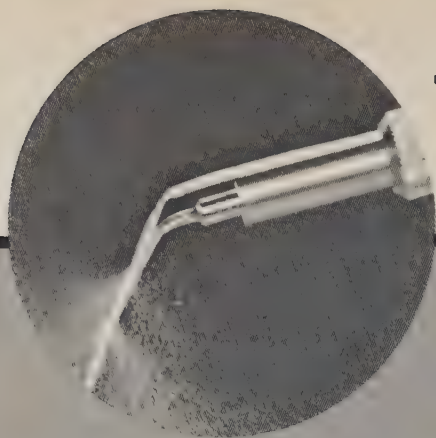
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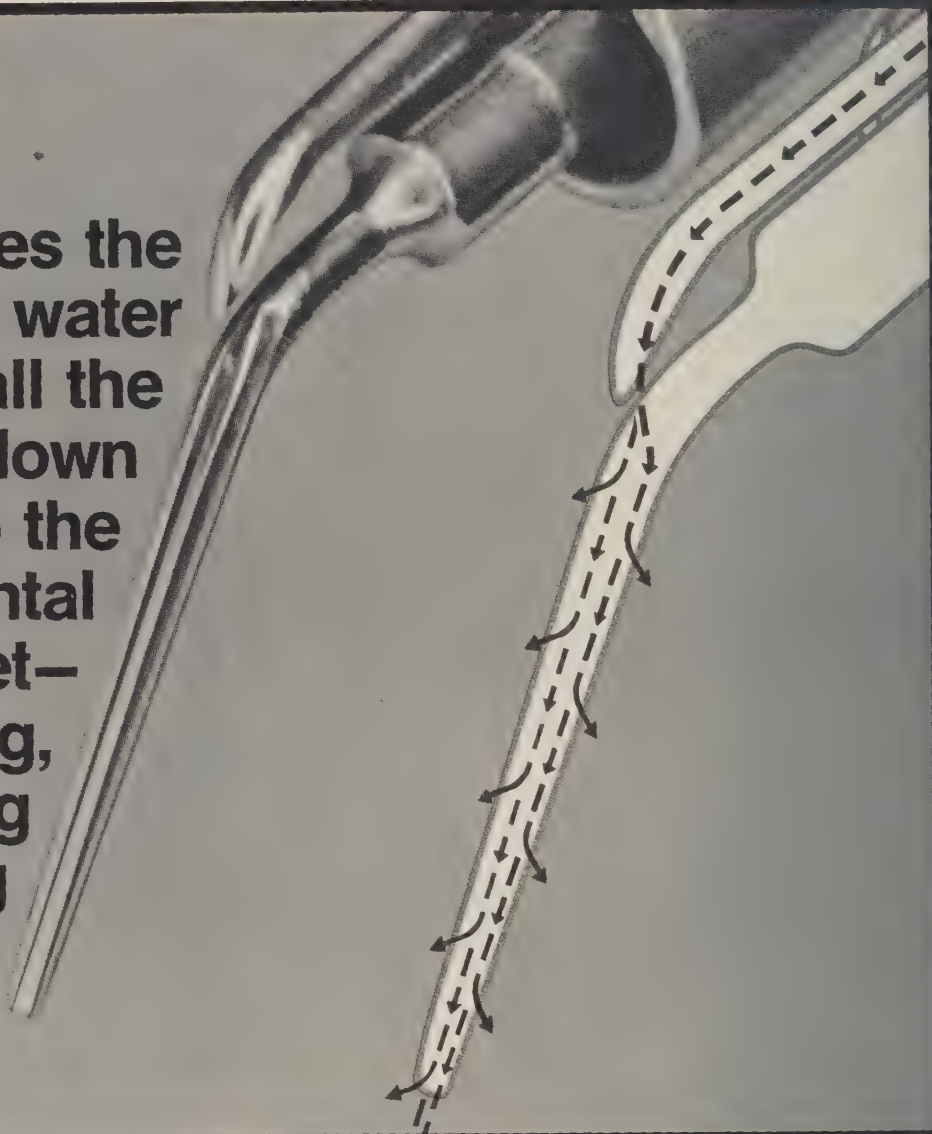
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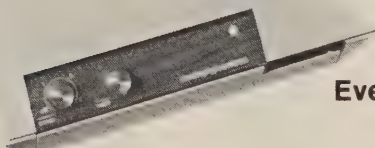
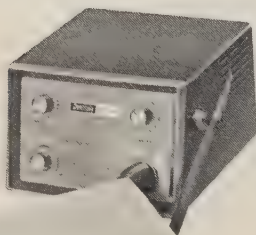
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Strength modification of polycarboxylate cement with fillers

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D.C. Smith, MSc, PhD, FRIC
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In order to modify the flow characteristics and improve its compressive and tensile strength various zinc salt, aluminum oxide, mica and stainless steel powder and fibre fillers were incorporated into a zinc oxide-polyacrylic acid cement formulation. Cement filled with aluminum oxide at 60 per cent of the powder by weight and mixed in a 2:1 powder/liquid ratio was the most favourable combination. Compared to unfilled cement, compressive strength increased by 80 per cent and tensile strength by over 100 per cent. The modified cement was readily mixed to a creamy paste which adapted well with instrumentation, and set in six to eight minutes.

Afin de modifier les caractères du fluage (flow) tout en améliorant la résistance à la compression et à la tension, l'auteur a utilisé un mélange incorporant soit du sel de zinc, de l'oxyde d'aluminium, de la poudre de mica et d'acier inoxydable et des obturations de fibre dans un ciment d'oxyde polyacrylique d'acide de zinc. Le ciment contenant de l'oxyde d'aluminium dont le poids représente 60 pour cent de la poudre et mélangé dans une proportion poudre/liquide de 2:1 constitue la combinaison la plus favorable. Comparée au ciment sans mélange, cette combinaison présente une résistance à la compression de 80 pour cent supérieure et une résistance à la tension de plus de 100 pour cent supérieure. Le malaxage du ciment ainsi modifié lui donne rapidement la consistance d'une pâte crémeuse qui s'adapte parfaitement aux instruments et se solidifie en six à huit minutes.

Zinc polycarboxylate or zinc polyacrylate, introduced by Smith in 1968,^{1,2} is a relatively new cement used in clinical dentistry. McLean,³ in his five year study, noted the adhesive benefits of the cement in relation to tooth substance as well as pulpal compatibility and flow characteristics. Its use as a cementing, lining, and luting agent, as well as experimental use as a "biomaterial" requires a diversity of rheological properties. This study examines the effect of adding fillers to the basic zinc oxide-polyacrylic acid formulation, both to improve handling characteristics and to improve compressive and tensile strength values.

Materials and methods

Following preliminary work, three basic types of fillers were selected on the basis of powder particle size and distribution, expected surface reactivity, and the ability to mix and be compatible with the basic formulation of the cement. Zinc silicate and zinc phosphate were chosen as representative of zinc salts, aluminum oxide and mica as ceramics, and stainless steel fibres and powder, an alloy whose surface is chemically reactive with polyacrylate liquid. Gas is evolved in the surface reaction of certain polyacrylic acid liquids on a strip of stainless steel. Aluminum oxide can react with the liquid over a period of 24 hours to form first a plastic gel and finally a brittle solid mass.

The basic formulation of the cement used in this study consisted of a heat treated zinc oxide powder,

Setting time of unfilled and filled polycarboxylate cement

Table 1

Filler*	I, initial set F, final set	Setting time	
		23°C	37°C (100% humidity)
Polycarboxylate (unfilled)	I	5.5	3.0
	F	7.0	4.0
Stainless steel fibre	I	7.0	5.0
	F	14.0	10.0
Zinc silicate	I	16.5	6.5
	F	22.0	12.0
Zinc phosphate	I	30.0	12.0
	F	36.0	24.0
Alumina I (German)	I	11.0	5.5
	F	14.0	7.0
Alumina II (333)	I	12.5	7.0
	F	18.5	11.0
Alumina III (325)	I	11.0	7.0
	F	16.0	10.0

All values expressed in minutes to the nearest half minute

*All fillers at 60 per cent of the powder by weight

ground to pass a 325 mesh ($<53\mu$), and an aqueous solution of polyacrylic acid of average molecular weight 50,000. This basic formulation was chosen for its utility in several clinical applications.

The powdered fillers were therefore selected to have a powder particle size compatible with the zinc oxide powder, that is, approximately 325 mesh. The zinc salts were C.P. grade or equivalent. Three aluminum oxide powders were used: Alumina III, a calcined form of 325 mesh; Alumina II, a hydrated form of 333 mesh (both from Alcoa Aluminum Company of America); Alumina I, a hydrated form with a finer particle size range (2.5μ to 10μ German reagent grade) than Alumina II. The stainless steel fibre was type 316L (Brunswick Metal Corp) and the powder was type 304 (BSA Metal Powders). The mica tested was a 325 mesh commercial sample (The English Mica Co, North Carolina).

The powders were prepared with a filler of increasing proportions which varied from 20 to 70 per cent of the powder by weight. Powder and liquid were weighed out to 0.01 Gm and spatulated by hand on a glass plate at 23°C and approximately 50 per cent room humidity. The powder/liquid ratio was kept constant at 2:1. The cement so prepared was allowed to set in cylindrical stainless steel split moulds 0.6 cm by 0.3 cm for one hour and then stored after separation in distilled water at 37°C for 24 hours. Testing was carried out on an Instron machine for compressive and diametral

tensile strength values at a crosshead rate of 2 cm per minute and a chart speed of 20 cm per minute.

The setting time of the cement mixtures was determined using a Vicat needle according to the ISO TC 106 Draft Specification for zinc oxide-eugenol cements: initial set was determined as the time elapsed from commencement of mixing to when the needle was no longer able to fully penetrate a disk of cement 2 mm thick; and final set was taken as the elapsed time at which the needle no longer dented the surface of the cement disk.

Handling characteristics were determined on a comparative basis of ease of mixing, consistency of mixed cement, and ability to manipulate the cement into the specimen moulds.

Results

The basic unfilled cement gave a compressive strength of 800 Kg/sq cm ($\text{Kg/sq cm} \times 14.2 = \text{psi}$) and a tensile strength of 90 Kg/sq cm. The setting time at room temperature was seven and a half minutes (Table 1).

Sintered zinc silicate ground to particle size 325 mesh gave similar strength results to the unfilled cement at the various proportions in both compressive and tensile tests (Table 2).

Compressive and tensile strength of filled polycarboxylate cement

Table 2

Filler	T, tensile C, compressive	Strength (Kg/sq cm)		
		Percentage of filler		
		50%	60%	70%
Polycarboxylate (unfilled)	T	90±18		
	C	800±85		
Stainless steel fibre	T	230±16	270±6	235±14
	C	860±30	1,040±14	760±34
Zinc silicate	T	85±30	95±6	80±10
	C	865±51	795±76	895±51
Zinc phosphate	T	105±22	180±76	90±24
	C	1,180±74	1,470±152	1,100±52
Alumina I (German)	T	115±36	150±12	155±14
	C	1,125±82	1,415±99	1,085±123
Alumina II (333)	T	120±82	160±32	155±6
	C	1,295±45	1,235±63	1,030±72
Alumina III (325)	T	120±36	190±24	165±40
	C	1,275±98	1,210±71	1,355±52

All values in Kg/sq cm ± standard deviation
Kg/sq cm x 14.2 = psi

Effect of varying filler content and powder/liquid ratio on alumina-filled polycarboxylate cement

Table 3

Material	% Filler	Strength (Kg/sq cm)			
		Compressive		Tensile	
		2:1	1.5:1	2:1	1.5:1
Alumina II (333)	50%	1,295	930	120	260
	60%	1,235	925	160	240
	70%	1,030	910	155	225
Unfilled polycarboxylate	0%	800	820	90	225

Zinc phosphate filler gave an optimum increase of 1,470 Kg/sq cm (80 per cent increase over base value) in compressive tests at 60 per cent of the powder by weight. The tensile strength increased to 180 Kg/sq cm (100 per cent). However, the setting time of the material at 23°C increased to over 30 minutes.

Initial testing on stainless steel powder using another polycarboxylate formulation gave values similar to the strength of the unfilled cement, indicating little effect on the cement. Testing was not pursued.

Best results with stainless steel fibres were obtained with those 12 µ by 475 µ. The compressive

strength was raised to 1,040 Kg/sq cm with 60 per cent filler, an increase of 30 per cent. More notable, however, was the 200 per cent increase in tensile strength to 270 Kg/sq cm. Unfortunately, the cement itself was very difficult to mix and the resulting fibrous mass unsuitable for clinical manipulation or placement. Under testing conditions, the specimens behaved in a ductile manner before fracture.

Preliminary trials with mica failed to give significant increases in values. Despite alterations in grinding and drying procedures, compressive values were similar to unfilled values and a small increase of 30 per cent over the base tensile value was re-

Effect of varying the strain rate on the strength properties of filled and unfilled polycarboxylate cement

Table 4

Material	T, tensile C, compressive	Strength (Kg/sq cm)	
		0.05 cm/min	2.0 cm/min
Polycarboxylate (unfilled, different formulation)	T	90±5	110±11
	C	710±31	920±60
Alumina I 60% filler	T	180±5	150±12
	C	1,050±105	1,415±99
Alumina II 60% filler	T	115±7	160±32
	C	870±198	1,235±63
Alumina III 60% filler	T	130±12	190±24
	C	935±69	1,210±71
P/L 2:1			

corded in one instance. Further testing was not felt justified.

Of the three aluminum oxide powders tested, the calcined form gave best results: a compressive strength of 1,355 Kg/sq cm (70 per cent increase) and a tensile value of 190 Kg/sq cm (over 100 per cent increase) were recorded. These optimal strengths were found at 70 and 60 per cent filler respectively and a powder/liquid ratio of 2:1. The setting time of the alumina filled cements indicate that the working time was lengthened (Table 1) (which is less than the initial set time) and the manipulative/placement properties were very good.

Altering the aluminum oxide filled powder/liquid ratio from 2 to 1.5, that is, to a more fluid mix, produced a more resilient cement. This was indicated by a drop in compressive strength and an increase in the tensile values to 105 per cent of the original 2:1 value (that is, from 100 Kg/sq cm to 260 Kg/sq cm) (Table 3).

A more fluid mix, suitable for cementing, was also achieved by a reduction to 50 per cent filler in the powder at a 1.5 powder/liquid ratio. This formulation resulted in a significant improvement in the tensile strength.

Preliminary results using another polycarboxylate formulation showed that the use of a lower rate of testing at 0.05 cm per minute instead of 2.0 cm per minute resulted in strength values which were generally 30 per cent lower at the slower rate. Similarly a composition with Alumina III at 60 per cent filler gave a compressive value of 1,210 Kg/sq cm when tested at 2 cm per minute and only 935 Kg/sq cm when tested at 0.05 cm per minute (Table 4).

Discussion

Aluminum oxide powder gave optimal results when compared to the other fillers from the standpoint of strength values and its manipulative properties in the clinically relevant area of working time, setting time, and ease of mixing and handling.

In the case of zinc phosphate, the strength was markedly affected by only a 10 per cent increase or decrease of filler proportion from the optimal 60 per cent. This sensitivity to amount of filler was much less in the alumina filled cements. The very long setting time was unacceptable.

Poor results with the zinc silicate, stainless steel powder, and the mica were probably due to the inadequate reaction at the interface between filler and cement.

Increased strength with stainless steel fibres perhaps was due to an increased surface area available for bonding as well as greater surface interaction not present in the above fillers. It was noted that the specimens behaved in a ductile manner, especially under diametral tensile loading. This must be taken into account when comparing them to the other brittle cements. The handling characteristics of the material were wholly unacceptable for clinical use.

The incorporation of aluminum oxide resulted in other desirable characteristics in the cement. An improvement in the tensile relative to compressive strength at cementing consistency may be relevant to the clinical performance of these cements in areas under intermittent tensile loading, such as bridge abutments in cantilever restoration.³

The improvement in strength may be due to the crosslinking of part of the polyacrylic acid by aluminum ions. Separate experiments using aluminum oxide alone showed that chemical reaction with polyacrylic acid could occur. A similar principle has been employed by Kent and Wilson⁴ with the so-called glass-ionomer cements.

Our results for the effect of the rate of testing generally concur with those of Jones, Wilson and Osborne⁵ and Levant and Smith⁶ in that a greater force was required to fracture alumina-filled specimens of the same size at a higher rate of loading. In further testing of the alumina reinforced material a general increase of 30 per cent occurred when the crosshead rate was increased from 0.05 to 2 cm per minute (Table 4).

The criteria of mixing, handling and setting characteristics are critical in the clinical area. Of the selected fillers tested, polycarboxylate cement filled with aluminum oxide exhibited the most favourable combination: the cement was readily mixed to a creamy paste which adapted well with instrumentation and the lengthened working time permitted greater flexibility in its use, that is in placing multiple restorations.

Summary

Various selected fillers were tested in a basic formulation of zinc oxide powder and polyacrylic acid liquid. These included zinc silicate, zinc phosphate, stainless steel powder and fibres, mica,

and three grades of aluminum oxide. The best results were given by the aluminum oxide at 60 per cent of the powder by weight in a mix of powder/liquid ratio 2:1. Compressive values increased by 80 per cent and tensile values by over 100 per cent over the unfilled cement results when tested on the Instron machine at a crosshead rate of 2 cm per minute. The handling characteristics of the alumina-filled cements were also superior.

The authors express appreciation to L. Harris and P.K. Tjong for valuable technical assistance.

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Dr. Smith is professor of dental materials science; and Dr. Laurence is a graduate student, Fac. of Dent., U of T.

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Etching effect of topical fluorides on dental porcelains: A preliminary study

D. J. Gau, DDS
E. A. Krause
Edmonton

Several topical fluoride agents were applied to the surfaces of a variety of dental porcelains and surface glazes. Acidulated fluorides produced notable etching that varied somewhat with the type of porcelain and was modified by porcelain polishing procedures and the presence of saliva or varnish films. Rubber dam isolation gave best and most consistent protection to porcelain restored teeth.

Les auteurs ont étudié l'effet de l'application topique de fluorures sur les surfaces de plusieurs espèces de céramiques et de glaçures de surface pour usage dentaire. Les fluorures acidulés produisirent un effet de gravure assez marqué qui varia avec les procédés de polissage de la céramique et la présence de salive ou d'une pellicule de vernis. L'isolation obtenue par une digue de caoutchouc fournit la protection la plus efficace des restaurations en porcelaine.

Many dentists have observed the effect of acidulated topical fluorides on glass dappen dishes (hydrofluoric acid solutions have long been used as glass etchants). Therefore, it is not surprising that acidulated topical fluoride agents may etch dental porcelains since they contain high percentages of glass.¹ Clinically, some etching effects have been observed.²

The action of acid fluoride solutions on glass may be a simultaneous nucleophilic-electrophilic attack on the silicon-oxygen network as well as electrophilic attack on non-bridging oxygen atoms.^{3,4} A rough surface with a film of reaction usually produces results.⁵ Although etching may improve strength by altering surface flaws,^{6,7} the resulting rough surface of the porcelain can diminish its biological tolerance through increased collection of plaque,⁸ impair its shading and aesthetic qualities, and reduce its resistance to staining.

This article reports the results of preliminary observations on the porcelain etching effect of topical fluoride agents and an evaluation of various protective mechanisms to protect porcelain restored teeth against the effects of dental prophylaxis and topical fluoride therapy.

Materials and methods

One hundred dental porcelain specimens were prepared on either two penny-weight rectangles of Ceramco gold or rectangles of Williams .001 inch

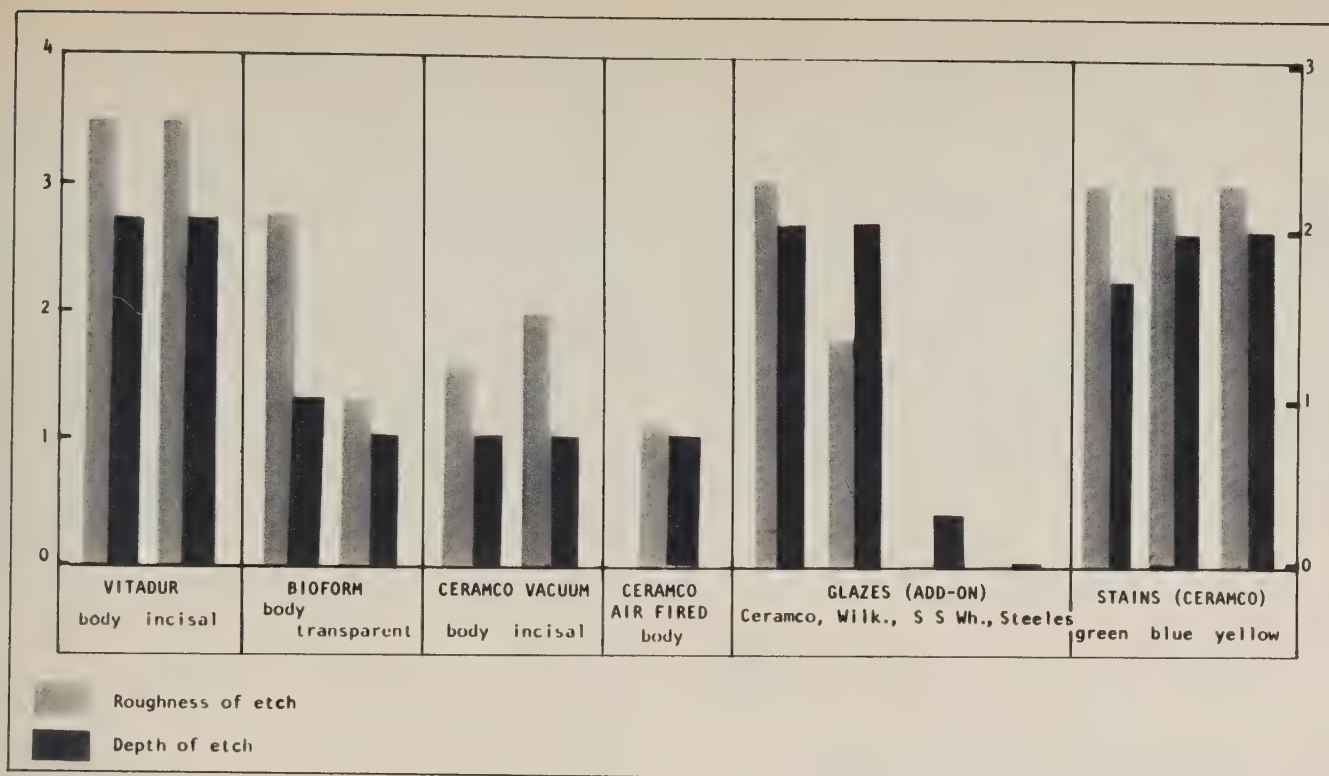


Fig 1 The effects of Acidiflur Topical Agent on several autogenously glazed porcelains, add-on glazes and stains (sources: Vitadur Aluminous Porcelain, Mo-Dent Ltd, Montreal; Bioform, Dentisply, York, Penna; Ceramco Inc, Woodside NY; S. S. White Dental Mfg Co, Philadelphia; Steeles, Columbus Dental Mfg Co, Columbus, Ohio; The Wilkinson Co, Westlake Village, Calif). The add-on glazes and stains were placed on Ceramco autogenous glazed body porcelain. The comparisons were made on 20 minute etched areas. The higher the number, the greater the increase in roughness (range 1-4) or depth of etch (range 1-3).

platinum foil, used in double thicknesses. The porcelain was built up and fired on the metal bases using techniques very similar to those described in *Modern Practices in Dental Ceramics*.⁹ A Stern Transi-Vac furnace (Stern Dental Co, Mount Vernon, NY) was used for the porcelain firing. This procedure provided relatively flat-surfaced porcelain specimens about 13 x 16 mm. The various dental porcelain products used in the fabrication of these test specimens are listed in Figure 1.

A window technique¹⁰ was employed to expose selected areas of a specimen to topical fluoride agents. Four round holes, 3/16 inches in diameter, were punched out of a piece of black electrical tape and the resulting tape mask was carefully placed and burnished onto the porcelain specimen. The four holes in the tape mask were covered with four small pieces of tin foil and four pieces of electrical tape; then the entire specimen was sealed with baseplate wax. Windows to the surface of the specimen were then readily available by removing the small tape and foil covers. The exposure times selected for the four areas of each specimen were two, four, 10 and 20 minutes (a different exposure time for each window). Four different exposure times were useful since there was a rather wide range of etching effects. The window technique was employed for most specimens; however, on

several specimens where it was desired to examine larger treated surface areas, electrical tape was employed to block out or expose large portions of the surface (1/2, 1/3, 2/3 of the specimen surface). Three or four porcelain specimens were placed in 6-8 ml of fresh topical agent for the appropriate times. All windows or areas not involved were covered. Topical solutions used were recently purchased and commonly available brands listed in Figure 2. After each exposure the specimens were flushed with distilled water and each exposed window was lightly cleaned with a cotton bud. Removal of the tape mask allowed easy observation of the etch effect (Fig 3).

Four preliminary experiments were conducted to observe the effects of:

1. An acidulated topical fluoride agent on several porcelains.
2. Four different fluoride agents on one porcelain.
3. Polishing procedures on porcelain etching. The polishing procedures comprised (a) a Dedeco (Dedeco Wheel, Dental Development and Mfg Corp, Brooklyn, NY) rubber wheel applied to the surface of the porcelain for 30 seconds, (b) fluoride prophylaxis paste applied to the surface of the porcelain with a webbed rubber cup for 30 seconds, and (c) 10 minutes of brushing with an Oral B-60

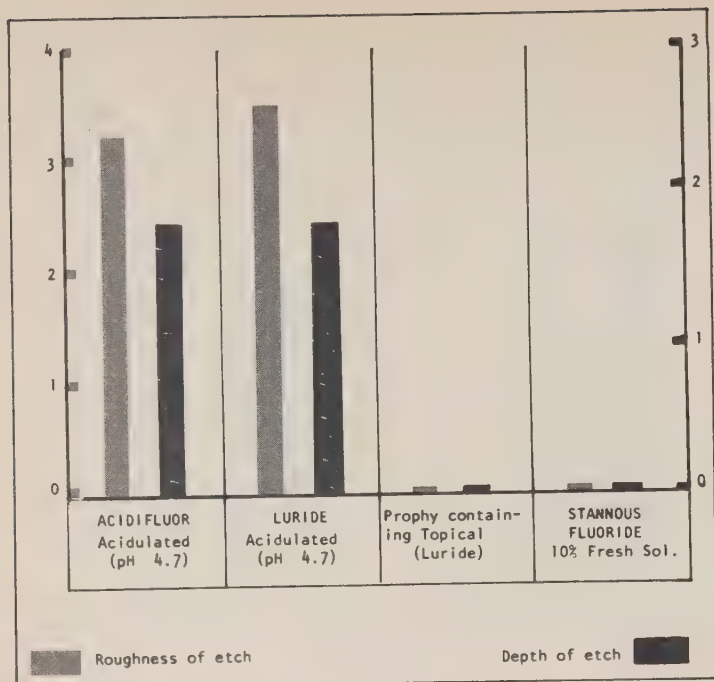


Fig 2 Comparison of four different topical agents applied on Ceramco blue add-on stain. Topical fluoride prophylaxis paste was used with a rubber cup to polish the porcelain, and the paste was allowed to remain on the porcelain for an appropriate time period to act as a topical agent. The agents used were: Acidifluor 5-10, 1.23 per cent fluoride ions in a M/10 phosphate solution, pH 4.7 (Stanley Drug Products Ltd, Vancouver); Luride phosphate topical solution, 1.23 per cent fluoride ions in M/10 phosphoric acid solution, pH 4.7 (Davies, Rose-Hoyt, Pharmaceutical Division, The Kendall Co, Needham, Mass); Luride prophylaxis paste, 1.2 per cent fluoride in M/10 phosphoric acid solution with silicon dioxide abrasive (Davies, Rose-Hoyt); Stannous fluoride (Procter and Gamble Co, Hamilton, Ont).

soft toothbrush and a relatively abrasive tooth paste¹¹ (Sensodyne, Block Drug Co (Canada) Ltd).

4. Surface protecting films, such as saliva, dental varnish (Copalite, Cooley and Cooley Ltd, Houston, Texas), petroleum jelly (Vaseline) and Silcote (L.D. Caulk Co, Toronto), and the use of a "mini" rubber dam. The saliva film was applied by immersing the porcelain specimen in fresh saliva at 90°F for eight hours. After withdrawing the specimen from the saliva, the porcelain was air-dried without disturbing the surface film. Drying teeth before topical applications is a common procedure. A varnish film was applied to the porcelain specimens by wiping the surface of the specimen with a cotton pellet wetted in copal varnish. A range of one to four applications was evaluated. Copalite was stained black with Sudan Black B Fat Stain to observe its ability to coat porcelain restorations clinically. Thin coats of petroleum jelly or Silcote were applied to porcelain specimens with a cotton bud. Thick coats of these materials were applied with plastic instruments, spatulas or a brush. Rubber dam may be used to isolate teeth with porcelain restorations from contact with topical fluoride in

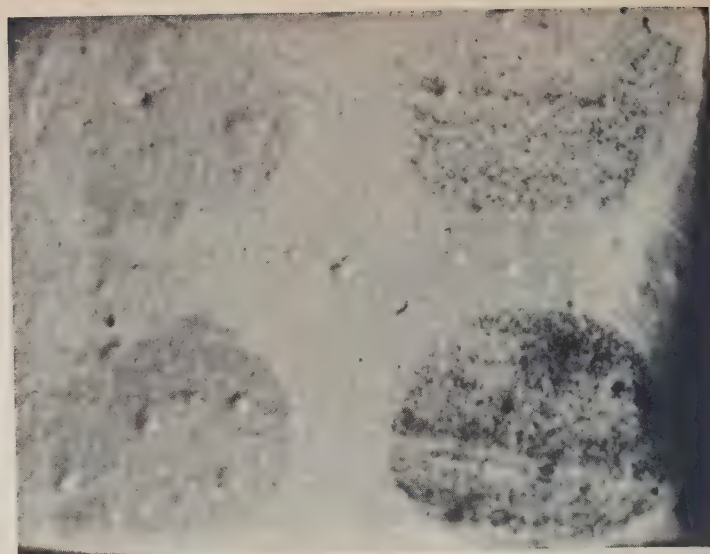


Fig 3 A porcelain specimen with the tape mask removed. The areas following exposure to acidulated topical fluoride solution for two, four, 10 and 20 minutes can easily be seen. This specimen was stained with green Ceramco stain; some colour change occurred with partial removal of the stain.

the operating field; "mini" rubber dams were used in this manner as illustrated in Figures 4 and 5.

Data were obtained by comparing the specimens under a dissecting microscope and taking and comparing colour slides of the specimens. Using an arbitrary range for etching effects, three independent observers assessed the specimens and the results were averaged for experiments 1, 2 and 3.

The progress of surface changes with abrasion and/or fluoride etch at selected points on some specimens was microscopically observed with the following technique. A specimen was mounted on a glass slide. With the glass slide positioned on a micrometer microscope stage, it was possible to select and record the co-ordinates of specimen points in terms of the micrometer settings. The specimen and the glass slide then could be removed for surface treatments and accurately repositioned in the microscope stage as often as desired. Selected specimens were also examined in a scanning electron microscope.

Results

Examination of surface morphology of the etched porcelain showed variations in both the apparent depth of etch and the roughness of etched areas. Arbitrary ranges were established for (a) the depth of etching (0 [no etching] to 3 [deepest etching]), and (b) the roughness (0 [no increase in roughness from unetched porcelain] to 4 [maximum increase in roughness observed]). Three in-

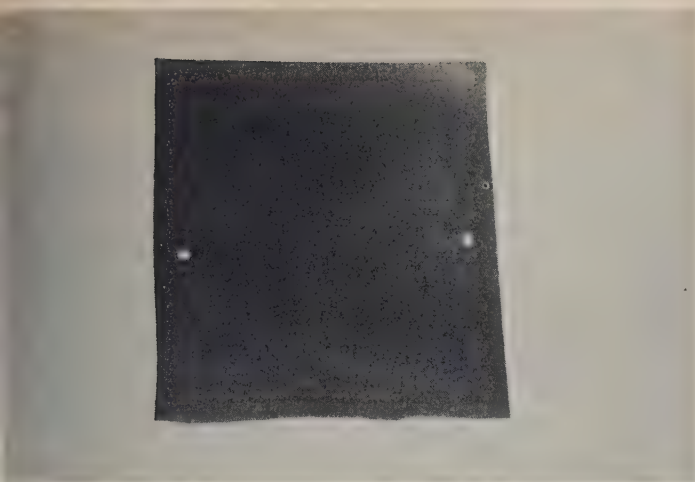


Fig 4 "Mini" rubber dam punched for placement on maxillary anterior four unit porcelain bridge (12-22).



Fig 5 "Mini" dam being placed. The dam should be carefully inverted around the gingival margins of teeth adjacent to those restored with porcelain.

dependent observers rated the etching effects on the specimens, and the results were averaged and recorded in Figures 1, 2 and 6.

It was difficult to evaluate the etching through protective films in the same manner as experiments 1, 2 and 3. Etching through films usually occurred at isolated spots and to varying degrees on a specimen; therefore only descriptive evaluations are given.

Dried saliva films — Microscopically observable residue was present on the surface of the porcelain, which did provide an observable reduction in the amount of etching.

Copal varnish films — Carefully applied films of copal varnish appeared to cover the porcelain specimens completely. However, after four minutes' exposure to topical fluoride agents, some areas of the copal varnish disintegrated, allowing surface etching. These areas of varnish film breakdown appeared to be associated primarily with sharp changes in contour of the porcelain or surface irregularities. Four generously applied coats of copal varnish seemed to provide adequate protection for four minutes of exposure to topical agents. Clinically, the stained copal varnish flowed adequately over both cleaned and plaque-covered porcelain.

Petroleum jelly and Silcote — Thin films of petroleum jelly or Silcote applied with cotton pellets gave rather spotty or inadequate protection. Thick coats (1 mm or more in thickness) of either of these materials when applied with a spatula, plastic instrument or brush gave adequate protection in the laboratory. However, in the clinic, such techniques proved messy, difficult to control and generally unsatisfactory.

Rubber dam — The use of the "mini" dam to isolate porcelain restored teeth from the field of operation is simple and appears to be effective. When a "mini" dam was applied over a plaque-covered porcelain bridge (12 to 22) and the surrounding area painted with topical agent containing a disclosing solution, no apparent leakage onto the porcelain restorations occurred.

Detailed microscopic observations of the etched surfaces revealed two interesting phenomena:

(A) Initially, as the etching progressed, small crystal-like structures protruded from the etched surface; then as etching advanced, on many specimens these initial crystals became surrounded with larger, irregular areas, almost as though the initial crystals were surrounded by snowflake-like structures. This is fairly well illustrated in Figure 7. With prolonged etching, many of these outer snowflake-like structures disappeared, leaving only central, more persistent crystals protruding from the surface. This observation may be explained as an "imprint" phenomenon because of etching residue that remains on the surface.⁵ A second explanation for this observation may be found in the consideration that feldspar glass being very viscous at firing temperature may be rather slow to diffuse into the surrounding matrix glass. Partially melted feldspar crystals then may be surrounded by a feldspar glass that retains some degree of order, and thus may be slightly less soluble than the matrix glass. Some support for this theory emanates from the observation that over-fused and abraded porcelain showed very little of these snowflake structures, while under-fused porcelain demonstrated these patterns extensively.

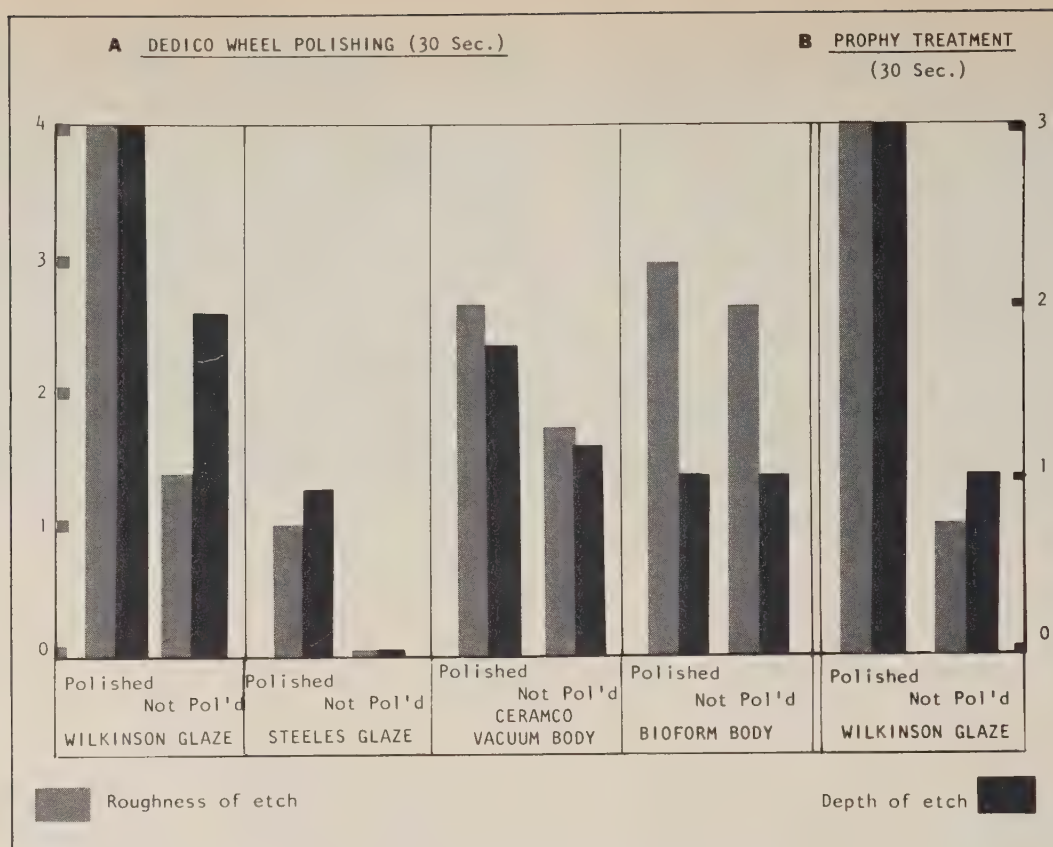


Fig 6 The effect of polishing procedures on porcelain etching. In all cases, polishing increased the porcelain's susceptibility to etching. The observations on tooth brushing were not included in the initial comparative evaluations; however, after 10 minutes of brushing, the surface of the porcelain showed obvious scratching and a marked increase in susceptibility to etching.

(B) Increased roughness of the abraded and etched porcelains seems to be associated with (1) pitting of the surface that often appeared in lines or tracks, as though pieces of abrasive had been rolled on the surface of the porcelain, and (2) widening of scratches as illustrated in the scanning electron micrographs (Fig 8, 9) where one scratch was followed from a non-etched zone into the etched zone on the abraded surface of one specimen. The persistent crystal-like structures protruding from the surface were also present in the etched zone, although not demonstrated in Figure 9.

Discussion

Since this is a preliminary study based on limited data, any comparison of the susceptibility of the different porcelains to topical fluoride etching would be premature. However, our results indicate that: (1) acid topical fluoride agents can etch dental porcelains; (2) the degree of etching varies with the type of porcelain, stain or glaze used; (3) mild polishing procedures increase the

susceptibility of porcelain surfaces to etching; (4) stannous fluoride topical solutions have little etching effect; (5) dried saliva films and dental varnish provide some protection against etching; and (6) a carefully applied "mini" dam appears to give adequate protection against topical fluoride agents.

Porcelain subjected to repeated abrasive prophylaxis treatments followed by topical application of acidulated fluorides may, over a period of years, exhibit severe etching.

When giving a dental prophylaxis and fluoride treatment to patients with porcelain restorations, it is therefore advisable to avoid abrasive cleaning of the porcelain and eschew the use of an acidulated fluoride agent on the porcelain or isolate the porcelain surface with a protective material.

Surface roughness produced seemed to be at least partially independent of etch depth. This observation may be the result of varying amounts and particle sizes of mineral phases in the different porcelains.¹ In the fused porcelains, the glass phases seem to etch more quickly, leaving the mineral phases protruding from the surface; thus variations in the mineral content may lead to variations in roughness.



Fig 7 SEM micrograph of Wilkinson's glaze. Right hand surface unetched; left hand surface was subjected to a 10 minute etch with acidulated topical fluoride. x 50.



Fig 8 SEM micrograph of a scratch on the surface of Wilkinson's glaze made by a Dedeco rubber wheel. x 20,000.

Considerable work remains to be done in this area, such as more extensive evaluation of the susceptibility of different porcelains to etching, and the effects of different maturing temperatures on the susceptibility to etch. More searching clinical evaluation of protective techniques is needed and the effects of extended exposure of porcelains to fluoride tooth pastes should also be investigated. Despite the work that remains to be done, we thought it of value to report our preliminary observations at this time because of their clinical significance.

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Fig 9 SEM micrograph of a scratch on Wilkinson's glaze that extended from the unetched area in Figure 7 into the area of the 20 minute etch in this figure. Note widening of the scratch by comparing Figures 7 and 8 as well as the roughness in this scratch, which may be etching debris. X 20,000.

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Maxillo-mandibular surgery for correction of dentofacial deformities:

3. Maxillary protrusion

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Victor Moncarz, DDS
Toronto

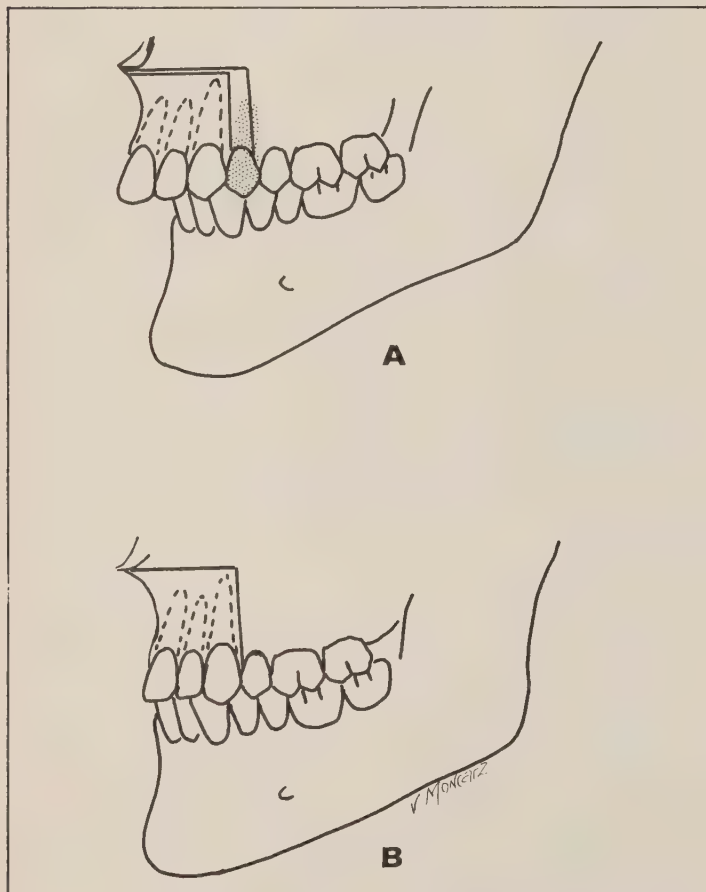


Fig 1 Maxillary anterior alveolar osteotomy for correction of maxillary protrusion. The horizontal cut is made above the apices of the incisor teeth.

This is the third in a series of articles on current practice of maxillo-mandibular surgery. The articles are provided by courtesy of the Royal College of Dentists of Canada.

Thanks to the variety of available techniques for corrective surgery in the maxilla, there are few malocclusions that cannot be corrected by surgery alone or by a combined surgical orthodontic approach. During the past decade, alveolar surgery, principally used for the correction of maxillary protrusion, has become popular in North America. Kule's¹ one stage technique has been modified²⁻⁴ to the point that there is no longer any fear of possible injury to the teeth, antrum, nasal cavity or pterygomaxillary region.

Maxillary protrusion may manifest as a Class I bimaxillary protrusion or, more commonly, as a Class II Division 1 malocclusion.⁵ Protrusion often results in the maxilla because of its forward growth, tooth size discrepancy, noxious habits and spacing of teeth.⁶ The surgical correction of this dentofacial deformity is best accomplished by an anterior

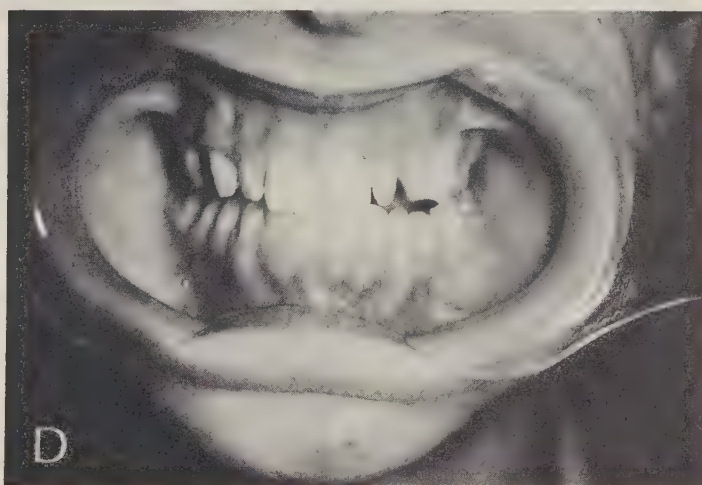
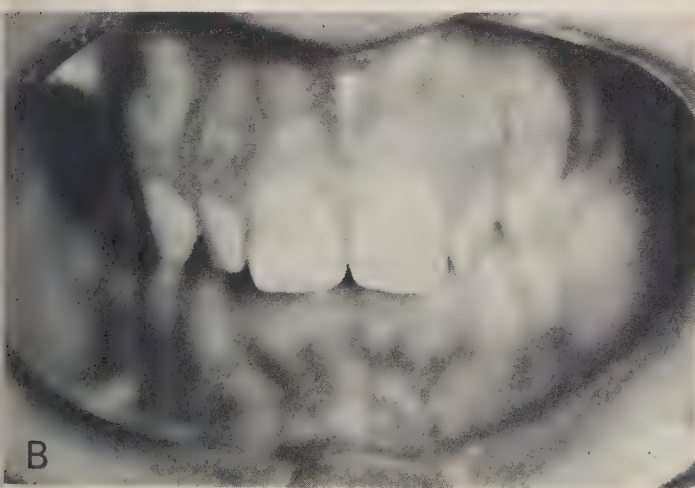
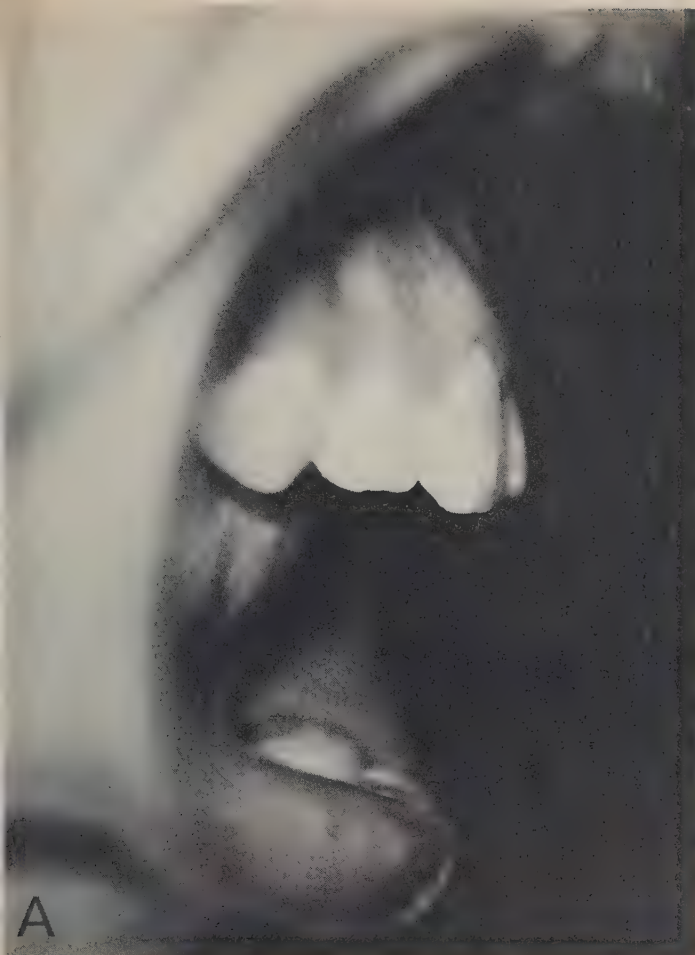


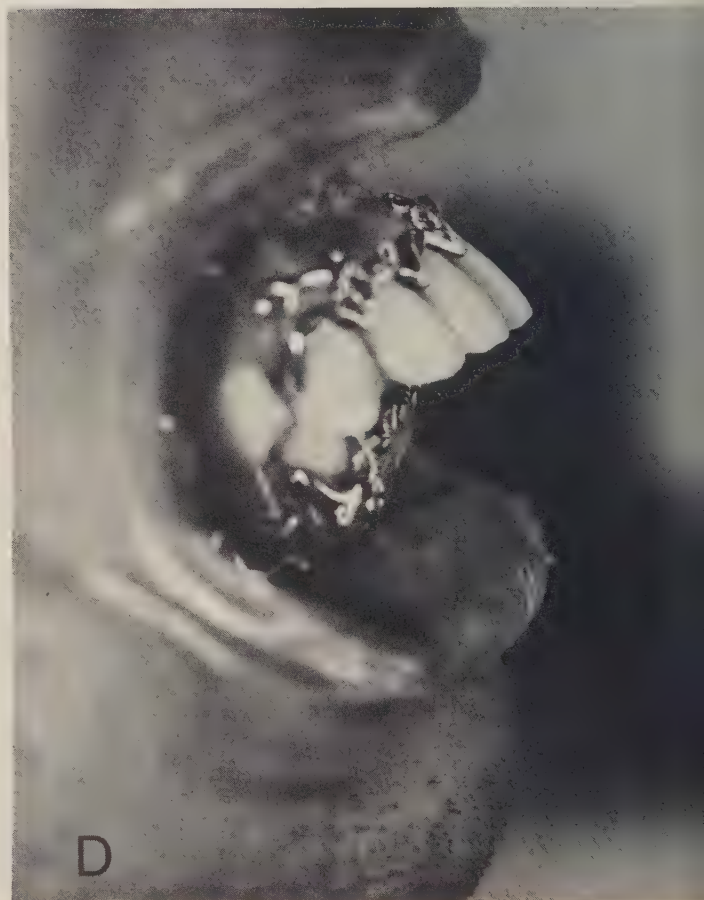
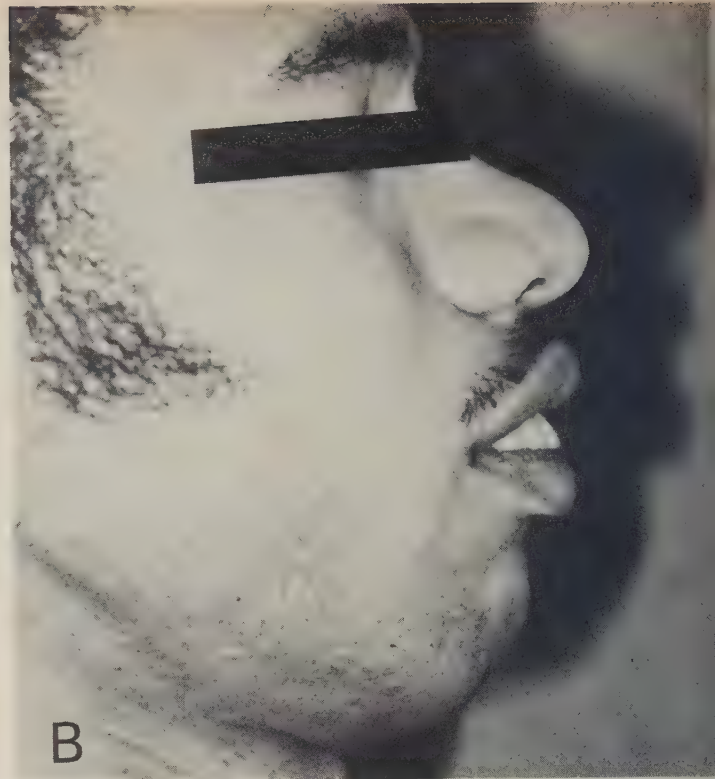
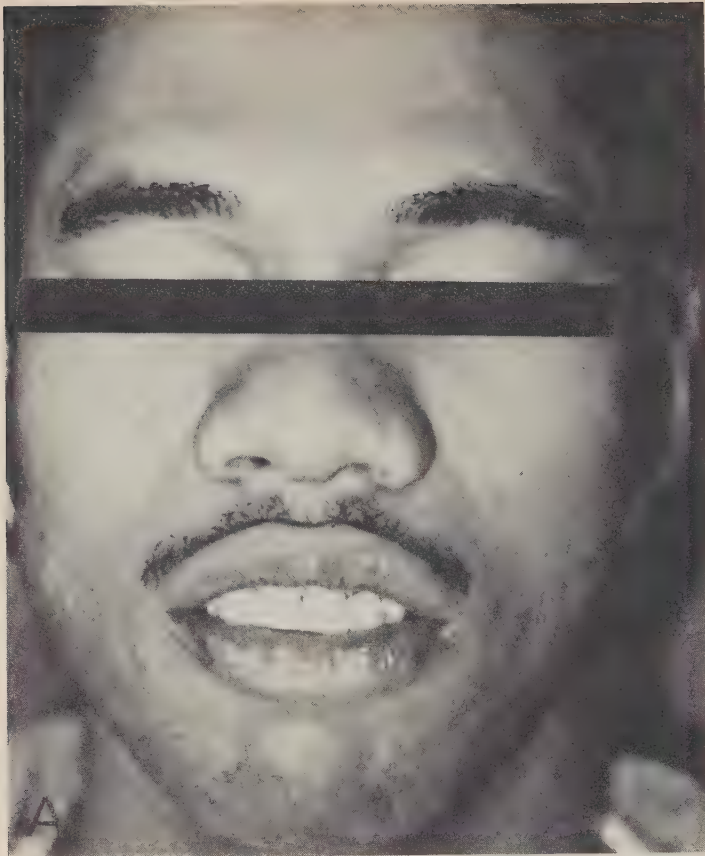
Fig 2 Anterior alveolar osteotomy is an adult with severe maxillary protrusion. A, pre-operative profile. B, pre-operative occlusion. C, postoperative profile. D, postoperative occlusion.

alveolar osteotomy.^{2-4,7,8} This consists of the surgical movement of teeth and the investing bone with their blood supply maintained via the soft tissues (Fig 1).⁷

Anterior alveolar osteotomy is indicated for adults who would otherwise be treated by removal of teeth, alveolectomy and a prosthesis to correct a cosmetic or functional problem. Surgery can also serve as an adjunct to orthodontic treatment. An excessively short upper lip coupled with a considerable amount of exposed maxillary gingiva lend themselves readily to correction by this technique.⁹

Surgery may also be the choice of treatment in teenage or adult patients when posterior anchorage teeth are missing or periodontal conditions prohibit orthodontic movement.² Anterior alveolar osteotomy is indicated in adults with severe maxillary protrusion which cannot be corrected by orthodontic treatment (Fig 2).

Various flap designs and techniques have been proposed for this procedure. They all attempt to: (1) maintain an adequate blood supply to the flap without compromising that of the fragment and the teeth; (2) provide sufficient exposure without



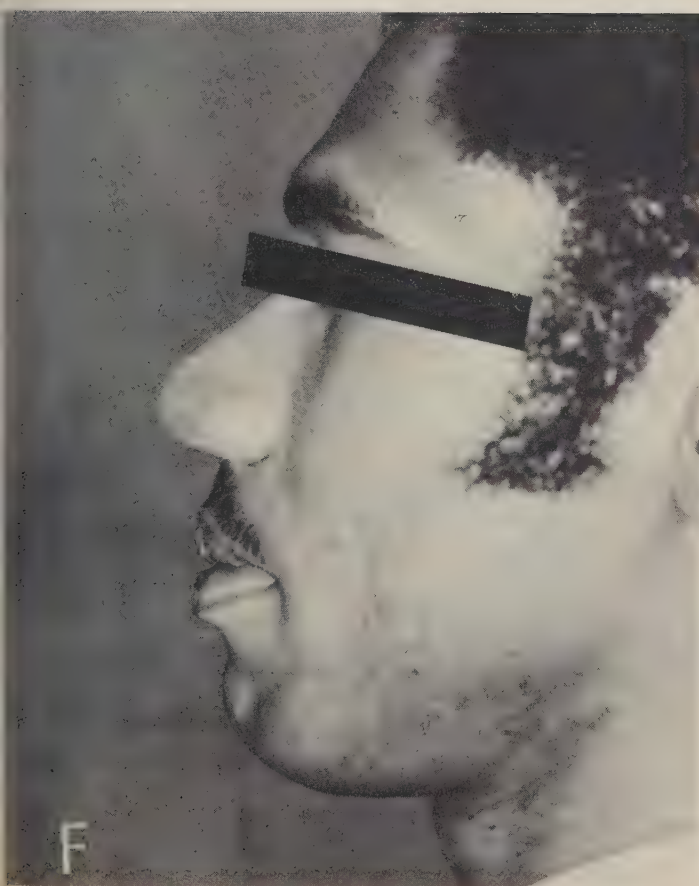
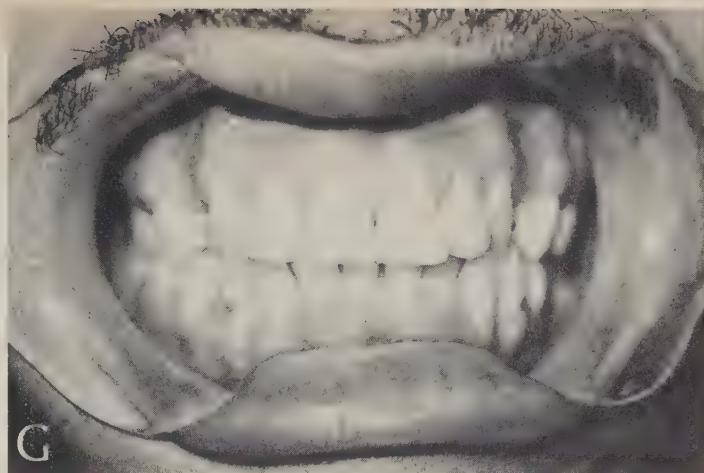
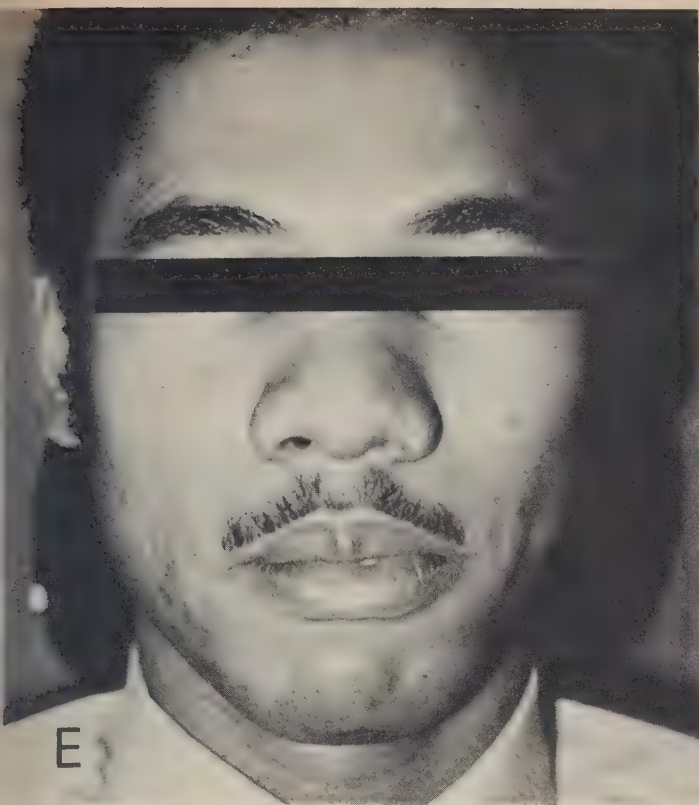


Fig 3 Class II Division 1 malocclusion with severe over-eruption of the mandibular incisors. The condition was treated by anterior alveolar osteotomy in the mandible and maxilla. A, B, pre-operative appearance. C, D, pre-operative occlusion. E, F, postoperative appearance. G, H, postoperative occlusion.

trauma to the dentition; (3) minimize interdental bone loss, thereby diminishing the likelihood of subsequent periodontal disease; and (4) provide maximum cancellous bone contact so as to reduce the length of immobilization and the incidence of regression and relapse.

Our technique involves raising a palatal flap, leaving the labial mucosa and periosteum intact and thereby ensuring adequate tissue perfusion.¹⁰ Following bilateral removal of teeth, usually bicusps, an osteotomy is performed by tunnelling through the extraction socket after a mucoperiosteal flap has been elevated. A horizontal cut is then made through the bone above the apices of the anterior teeth to the piriform fossa. The vomerine plate of the nasal septum is separated from the premaxilla with an osteotome producing free mobility of the segment.

Division of the premaxilla into two or three segments is sometimes necessary if pre-operative orthodontic assistance is not feasible.¹¹ In other instances, a mandibular anterior alveolar osteotomy is performed in conjunction with an anterior alveolar osteotomy in the maxilla, especially in Class II Division 1 deformities with severe over-eruption of the lower incisors (Fig 3). Bone grafting may be necessary in areas of poor bony contact.

The limiting factors for anterior alveolar osteotomy of the maxilla are the axial inclination of the upper incisors and the relationship between the upper lip, maxillary gingiva and incisors.⁹ Severe labial splaying of the upper incisors must be corrected by orthodontic treatment prior to surgical correction; otherwise considerable rotation and displacement of the fragment may be necessary in order to correct the malocclusion, and this could produce poor bony contact and disharmony in the lip and incisor relationship.

Immobilization is best accomplished by using a prefabricated acrylic occlusal splint in the maxilla without intermaxillary fixation.¹² The splint can either be wired directly to the posterior maxillary teeth or directly around the zygomatic arches. The mobilized premaxilla can then be wired either to the splint or to the posterior maxilla.¹² An occlusal wafer and intermaxillary fixation have also been used. However, the postoperative progress is better if there is no intermaxillary fixation because the patient can masticate to a certain degree and is therefore better nourished. Immobilization usually lasts for five to seven weeks.

The most severe complication of this procedure is necrosis and loss of teeth and bone. This can be avoided by proper planning and gentle elevation of the soft tissues. Excessive elevation of the soft tissue flaps must be avoided. Infection is rarely a

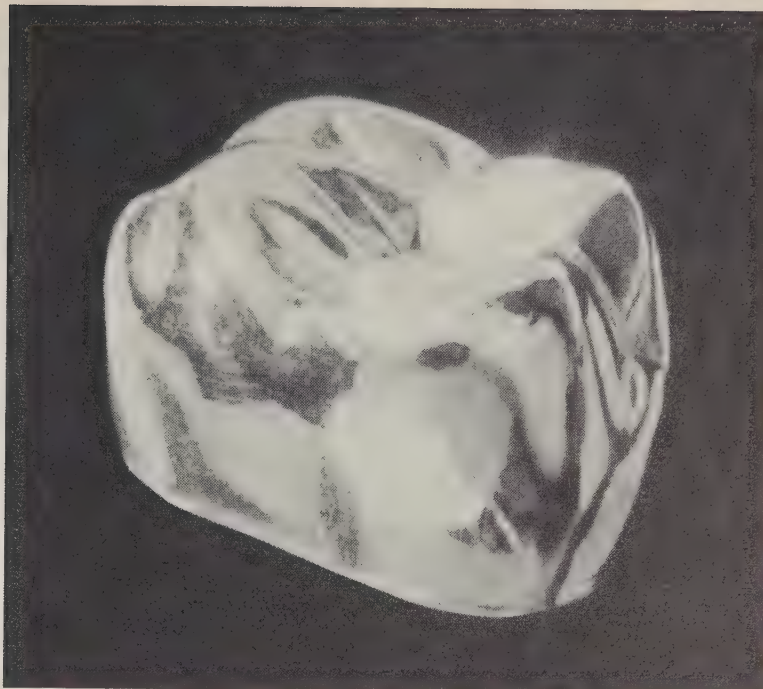
problem. Pulp vitality may be lost if a tooth is nicked with the bur resulting in the formation of a periapical abscess. As a rule, the majority of teeth retain their vitality.¹³ In adults, the possibility of engendering periodontal disease at the osteotomy site exists. Careful attention to proper flap design, approximation of bony fragments and flap closure will minimize this problem. Regression may occur following surgical correction of maxillary or bi-maxillary protrusion, especially if some degree of anterior open bite is present.⁷ Such patients usually have a deleterious oral habit that must be overcome, usually with the aid of a retainer.

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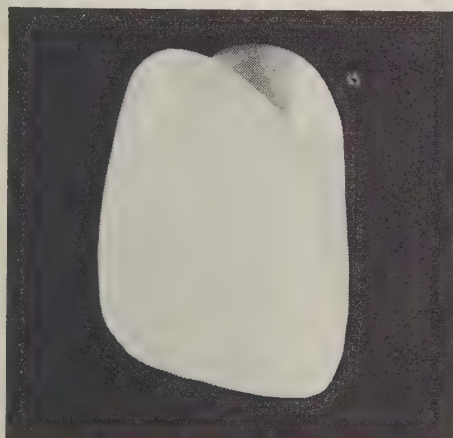
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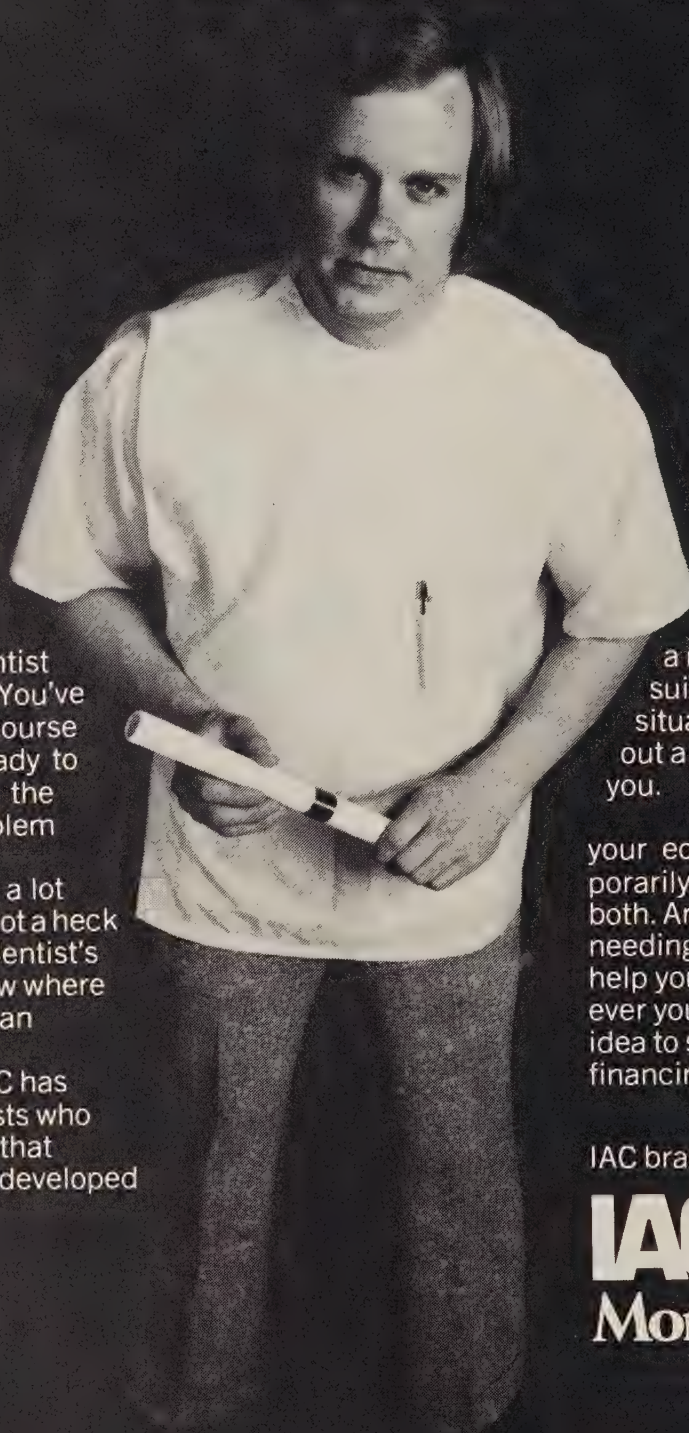
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Teeth, Teeth, Teeth

Sydney Garfield. New York, Simon and Schuster, 1969. (Available in Canada from the Musson Book Company, Don Mills, Ont). 448 p. Illus. \$11.95

Since there is a dearth of serious dental writing for the general public, I am loath to criticize Dr. Garfield's efforts; this book was obviously a work of love for him. He designed it and even drew most of the illustrations, including one on the inside back cover which shows a rocket, in the shape of a constricted third molar, ascending into space. His style is folksy and anecdotal, and therefore more successful in non-scientific areas. He has attempted to deal with all facets of teeth and dentistry, including a detailed account of our historical beginnings. Elsewhere, he discusses dentistry in relation to sports and comparative dental anatomy.

The content of the first few pages is illuminating. Page 1 is a pre-title page which is preceded by a "pre" pre-title page. This is followed by a devoted patient's poem entitled "To Sydney." Page 3 is a dedication by Dr. Garfield, while page 4 consists of a quotation by Carlyle and a note from the author. Next, we have the title page, consisting of drawings by Dr. Garfield, of teeth formed into letters and words. Page 6 contains the copyright; page 7 is another title page, and page 8 is a "title note" by the author. A poem

by Dr. Garfield fills page 9 as do his acknowledgements on pages 10 to 14. Finally, on pages 15 to 19 he gives us the content of the book.

A large part of the book is devoted to an explanation of the theory and practice of dentistry. Dr. Garfield is strongly inclined toward the technical and mechanical aspects of our profession. In today's atmosphere of preventive thinking it is regrettable that only five pages are directly related to personal oral hygiene. The text suffers by the lack of a scientific and biological approach, but the areas dealing with the development of dental treatment and zoology make pleasant reading.

I have a personal prejudice against this style of writing. It reminds me of the dental meetings and social occasions where certain practitioners expound their personal theories of oral diagnosis ("a good sense of smell can tell you a lot") and treatment – usually while the hors d'oeuvres are being served. Frankly, I prefer the meatballs.

M. D. Klotz

Sedation, Local and General Anesthesia in Dentistry

N. B. Jorgensen and Jess Hayden. Ed 2. Philadelphia, Lea & Febiger, 1972. (Available from The Macmillan Company of Canada Ltd, Toronto) 163 p. Illus. \$10.50

This text, although more specifically written for those with graduate training in sedation and general anaesthesia as it pertains to dentistry, would be well advised for senior dental students and general practitioners. It gives an insight into the use of sedation and general anaesthesia as an adjunct in providing dental care for patients who cannot be treated under local anaesthesia alone.

The sections on patient evaluation, local anaesthesia (anatomy, techniques, agents) and pharmacology are an excellent review for any practising dentist.

I recommend this text to anyone using sedation and general anaesthesia routinely. It provides a well condensed refresher course for this rapidly growing field of interest.

R. R. Schiewe

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REVIEWS/ANALYSE 423

Orthodontics: Principles and Practice

T. M. Graber. Ed 3. Toronto, W. B. Saunders Company Canada Limited, 1972. 953 p. Illus. \$24.75

This third edition of Graber's book has been considerably revised and expanded since publication of the second edition in 1966.

The book is divided into 18 chapters. In chapters 1 through 4 the author provides us with a 177 page résumé of all the actual knowledge on growth and development, physiology of the stomatognathic system and normal occlusion. This portion of the text is clear and concise and constitutes a veritable encyclopaedia where the general practitioner and the orthodontist who work with growing children will find many answers to their questions.

Chapters 5, 6 and 7 are devoted to the incidence, classification and aetiology of malocclusion. Angle's classification is explained in detail and special attention is given to facial profile and muscle function when using this classification. In classifying aetiological factors the author divides them into two groups: the general group which includes those factors that operate on the dentition from without; and the local group which includes those factors that are immediately associated with the dentition. Although there are drawbacks to this approach, we are inclined to agree with the author that it is the easiest classification for students to use.

Chapter 8, which deals with diagnostic procedures and aids and their interpretation, contains much valuable material. In fact, it is one of the best chapters in the book.

Chapters 9 and 10, which are devoted to unfavourable sequelae of malocclusion and biomechanics of orthodontic tooth movement, are also very well done. Students, general practitioners and orthodontists will find pleasure and profit in reading them because they contain collections of material not heretofore available in one place.

In chapter 11, orthodontic appliances are discussed in detail. Chapters 12, 13 and 14 are devoted to dental care during orthodontic therapy, emergency orthodontic appointments, and

preventive and interceptive orthodontics.

In chapter 15, surgical uncovering, cosmetic surgery and serial extractions are discussed. For the author, serial extraction is a valuable adjunct in treatment of Class I malocclusion, but it is an orthodontic decision and requires the knowledge, ability and clinical experience of the specialist who ultimately must complete the therapy in almost all cases.

Much irresponsible tooth movement has been seen in paedodontic circles where there has not been the benefit of expertise in changing diagnostic decisions and appliance manipulation. The most difficult cases that the reviewer of this book had to treat were cases treated by the general practitioner who tried to correct crowding of teeth by making what they call "serial extraction" and who was not prepared "to travel the road and make the numerous decisions based on periodic diagnostic criteria."

Chapters 16 and 17 are devoted to: limited corrective orthodontics; removable appliances and fixed appliances; problems of excessive overbite; opening and closing spaces; retraction of incisors and correction of anterior crossbite. The only appliances recommended by the author to treat anterior crossbite are the old acrylic inclined plane and the labial arch and nothing is said about the removable plates with finger springs which could be used to greater advantage by the general practitioner.

In the final chapter, dealing with limited corrective orthodontics and extra-oral force, the techniques recommended are excellent. However, we feel that neither the student nor the general practitioner is prepared to use these techniques and can understand why the author stated that "this last chapter has been incorporated in the text with some trepidation."

The references after each chapter are excellent, with some dated as recently as February 1972. However, the appendix at the end of the book is incomplete and the author has omitted mention of many orthodontic books which can be consulted to advantage.

As a text, this book is scientifically valid and is presented in a clear and comprehensible manner. The photographs and line drawings are excellent and the editing and printing are of a

high calibre. We would suggest though that the next edition be printed in two volumes instead of one.

This book can be recommended as a guide for the general practitioner and as a reference source for the orthodontist.

Paul Geoffrion

Histological Typing of Odontogenic Tumours, Jaw Cysts, and Allied Lesions

J. J. Pindborg, I. R. H. Kramer and H. Torloni. Geneva, World Health Organization, 1971. (Available in Canada from Information Canada Bookstores) 45 p. Illus. Book only \$12.00. Book with accompanying set of 150 colour transparencies \$50.00

This volume, the fifth in the series of tumour classifications being published by WHO, is the outcome of five years' work by the WHO International Reference Centre for the Histological Definition and Classification of Odontogenic Tumours and Allied Lesions, established at the Department of Oral Pathology, Royal Dental College, Copenhagen, Denmark.

An introduction explains the principles on which the classification is based and discusses some of the difficulties in typing odontogenic apparatus, neoplasms and allied lesions. Because the lesions described are mainly intra-osseous, a note is included on the radiographic appearances when these are distinctive or helpful in differential diagnosis.

The lesions have been grouped in the following three broad categories: neoplasms and other tumours related to the odontogenic apparatus, neoplasms and other tumours related to bone, and epithelial cysts. The first of these categories is subdivided into benign and malignant lesions, the second into osteogenic neoplasms and non-neoplastic bone lesions, and the third into developmental and inflammatory cysts.

General acceptance of this classification would make it easier for pathologists and others interested in odontogenic tumours, jaw cysts and allied lesions to compare the findings and to undertake collaborative research.

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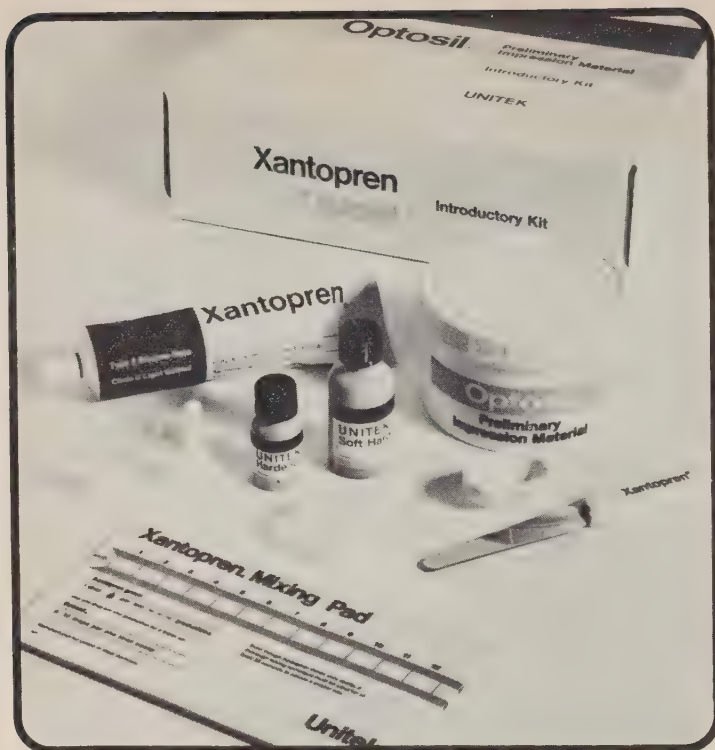
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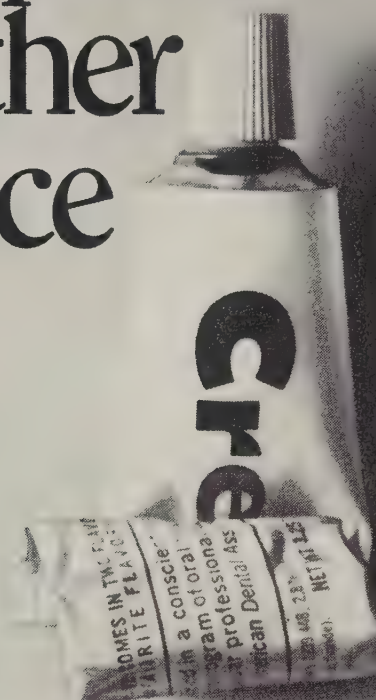
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4. J.A.D.A., 58:42, 1959
5. J. Dental Res., 39:871, 1960
6. J.A.D.A., 63:189, 1961
7. J. Dent. Child., 28:5, 1961
8. J.A.D.A., 64:216, 1962
9. J.A.D.A., 65:482, 1962
10. J.A.D.A., 70:914, 1965
11. J.A.D.A., 72:392, 1966
12. J.A.D.A., 72:408, 1966
13. J.A.D.A., 73:853, 1966
14. J.A.D.A., 77:594, 1968
15. J. Canad. Dent. Assoc., 36:262, 1970

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by 50 dentists during 246 working days

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Announcements/Avis

Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1973 Vancouver, Oct 14-17

1974 Windsor, Ont, Oct 2-5

1975 St. John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1973 Sydney, Australia, July 15-20

1974 London, England, Sept 8-14

1975 Chicago, USA, Oct 26-30

Continuing Education

Anaesthesia and Pain Control

Western Ontario. Symposium: Techniques on sedation in dentistry including acupuncture. A. G. Parnell and W. G. Spoerel. Oct 13, 1973. Regis limit 50. \$25

Dental Handicapped

Toronto. Dental care for the handicapped. J. A. Hargreaves. Nov 5-7, 1973. Regis limit 8. \$100

Dental Materials

Toronto. Recent developments in dental materials. D. C. Smith. Oct 29-31, 1973. Regis limit 10. \$100

Endodontics

Toronto. Endodontics. J. M. Phillips. Feb 6-8, 1974. Regis limit 10. \$100

Geriatrics

Toronto. Geriatric dentistry and the treatment of the terminal dentition. G. A. Zarb. Dec 17-18, 1973. Regis limit 15. \$100

Occlusion

Toronto. The role of occlusion in the development of the temporomandibular joint pain dysfunction syndrome. G. A. Zarb. May 6-7, 1974. Regis limit 15. \$100

Operative Dentistry

Western Ontario. Recent advances in operative dentistry and endodontics. R. E. Jordan and D. H. Skinner. Mar 28-29, 1974. Regis limit 40. \$75

Oral Medicine

Western Ontario. General and oral medicine for dental practitioners. R.I. Brooke and W. C. Watson. Apr 19, 1974. Regis limit 50. \$45

Oral Pathology

Toronto. Clinical pathology. J.H.P. Main. Oct 1-3, 1973. Regis limit 10. \$100

Oral Surgery

Dalhousie. Minor oral surgery. F. W. Lovely, A. E. Hoffman and A. Bhardwaj. Nov 23-24, 1973. Regis unlimited. \$50

Toronto. Oral surgery. P. T. Smylski. Mar 25-29, 1974. Regis limit 12. \$150

Orthodontics

Toronto. Orthodontics — prerequisite orthodontics for the G.P., R.O. Fisk. Apr 15-19, 1974

Toronto. Advanced orthodontic diagnosis emphasizing cephalometric roentgenography for orthodontists. B. Hemrend. Apr 22-23, 1974. Regis limit 5. \$100

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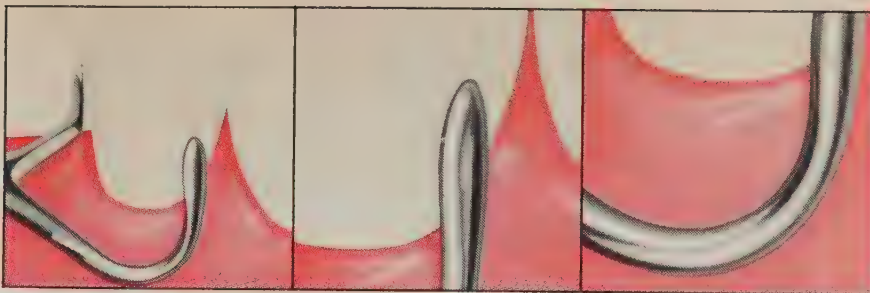
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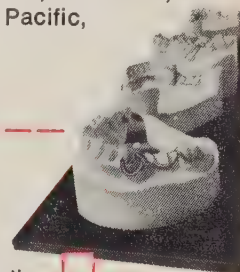
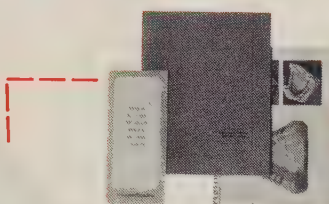
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Clasp Designs for Extension Base Partial Dentures, Lectures presented by A. J. Krol, D.D.S., 22nd Annual Seminar of the Group of Dental Studies, U.S.C. de Mexico, May, 1969.

Removable Partial Denture Design, Outline Syllabus, A. J. Krol, D.D.S., November, 1972, University of the Pacific, School of Dentistry.

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Toronto. Orthodontics — the activator in pre-orthodontic guidance and corrective treatment procedures. D. G. Woodside. May 6-7, 1974. Regis limit 30. \$150

Toronto. Orthodontics — orthodontic technical instruction for the general practitioner. D. G. Woodside. May 27-28, 1974. Regis limit 10. \$100

Western Ontario. Design and utilization of removable orthodontic appliances in general practice. A. W. Eastwood and W. S. Hunter. Mar 14-15, 1974. Regis limit 25. \$80

Paedodontics

Toronto. Paedodontics. J. A. Hargreaves. May 1-3, 1974. Regis limit 12. \$100

Western Ontario. Preventive dentistry for children. W. H. Feasby, S. J. Moss and F. Cappa. Apr 8-10, 1974. Regis limit 30 dentists and 20 dental hygienists or assistants: dentists \$125; hygienists and assistants \$30

Periodontics

Dalhousie. Periodontics. E. J. Hannigan, N. H. Andrews and D. G. Pentz. Jan 25-26, 1974. Regis limited. Dentists \$50, dental hygienists \$25

Toronto. Periodontics. J. E. Speck. Mar 6, 13, 20, 27 and Apr 3 and 24, 1974. Regis limit 12. \$150

Western Ontario. Essentials of periodontal therapy. B. J. Zulqar-nain and R. H. Johnson. Nov 23-24, 1973. Regis unlimited. \$75

Pharmacology

Western Ontario. Drugs in your practice. R. H. Johnson. Mar 8, 1974. Regis limit 45. \$45

Preventive Dentistry

Toronto. Preventive dentistry. R. C. Burgess. May 8, 15, 22, 29 and June 5 and 12, 1974. Regis limit 15. Dentists \$75; dental hygienists and assistants \$25

Western Ontario. Clinical preventive procedures for the dental office. D. W. Banting. June 14, 1974. Regis limited: 10 dental hygienists and assistants. \$50

Prosthodontics/Complete Denture

Toronto. The treatment of the edentulous patient. G. A. Zarb. Apr 1-5, 1974. Regis limit 8. \$125

Prosthodontics/Crown and Bridge

Toronto. Fixed bridgework in general practice — participating course. J. H. Hibberd. Apr 22-23; Apr 24-26; May 6-8 and May 9-10, 1974. Regis limit 15. \$200

Western Ontario. Crown and bridge for the general practitioner. D. B. Gilboe, M. Suzuki, G. A. Bedrosian, R. A. Hugill and W. R. Teteruck. Apr 25-26, 1974. Regis limit 40. \$75

Prosthodontics/Partial (removable)

Toronto. The treatment of the partially edentulous patient using removable partial dentures. G. A. Zarb. Apr 29-May 1, 1974. Regis limit 15. \$100

Western Ontario. Removable partial dentures. P.S. Sills and J.E. Ryan. Apr 4-6, 1974. Regis limit 20. \$100

Radiology

Western Ontario. Oral radiology for the general practitioner. J.A. Reid and A. Ruprecht. Sept 26, 1973. Regis limit 20. \$40

Western Ontario. Radiography for dental assistants; parallelling technique. J. A. Reid and A. Ruprecht. Nov 23-24, 1973. Regis limit 12. \$50

Western Ontario. Oral radiographic technique for the general practitioner. J. A. Reid and A. Ruprecht. Feb 20, 1974. Regis limit 10. \$40

Western Ontario. Radiography for dental assistants: bisecting angle technique. J. A. Reid and A. Ruprecht. Mar 8-9, 1974. Regis limit 12. \$50

Miscellaneous

Toronto. Emergency measures. R. S. Locke. Oct 29, 1973 and Feb 18, 1974. Regis limit 15. \$20

Western Ontario. Myths and misses in oral diagnosis. R. I. Brooke and J. P. Sapp. Sept 27, 1973. Regis limit 50. \$45

Western Ontario. The role of the activator in the mixed dentition. E. P. Harvold. Jan 25, 1974. Regis limit 40. \$65

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Letters/Courrier

The journal devotes this section to comments by readers on topics of current interest to dentistry. The editor reserves the right to edit all communications to fit available space. Printed communications do not necessarily reflect the opinion or official policy of the Canadian Dental Association. Your participation in this section is invited.

Cette partie du Journal est consacrée aux communications des lecteurs sur les questions d'actualité dentaire. La rédaction se réserve le droit d'adapter les communications à l'espace disponible. Les communications publiées ne représentent pas forcément l'opinion ou la politique officielle de l'Association dentaire canadienne. Vous êtes invités à participer à cette section du Journal.

Prince Edward Island dental manpower study

It is not surprising that dental hygienists can be trained for limited duties in restorative dentistry. (Use of expanded function dental hygienists in the Prince Edward Island dental manpower study, in the April 1973 issue of the Journal). Other personnel, with far less dental education than hygienists, have been trained to perform such functions to a similarly high standard.

The regrettable feature of the study was its obsession with therapy, extolling the virtues of increased productivity almost to the exclusion of preventive measures. Certainly prophylaxes and fluoride applications were performed, but nowhere in any of the tables was mention made of time spent on patient education. Indeed very little mention is made of such education anywhere in the paper, and certainly no indication is given as to

which aspects of patient education were covered. One must presume that scant attention was paid at all.

This study only emphasizes the folly of training dental hygienists for added restorative duties. Their training in the areas of preventive dentistry, patient motivation and the psychology of education are too valuable to be diverted to areas of therapy other than conservative treatment of periodontal disease. The need for additional, less expensive dental manpower is well proven; but the solution should be the training of a separate restorative auxiliary rather than dispensing with the preventive services of a dental hygienist.

*J. G. Silver, DDS
Assistant Professor
Department of Oral Medicine
Faculty of Dentistry
University of British Columbia
Vancouver, 8, BC*

The objective of this study was to measure the increase in productivity of dentists who utilized dental hygienists in restorative treatment. It should, therefore, not be surprising that the major emphasis was on treatment and productivity. The key consideration was to determine whether the amount of treatment could be increased sufficiently to compensate for the costs involved.

Dr. Silver is correct in his observation that little time was spent on dental health education. Many other areas of dentistry were similarly neglected. However, this has no bearing on this particular study.

The study data demonstrate that the dental hygienists have considerable time available when they are not involved in restorative procedures. This time can be used for dental health education and various specific preventive procedures. The time can also be used by the hygienist to direct and supervise the activities of one or more preventive assistants. It is in this latter role that the dental hygienist most effectively uses her skills in teaching and motivating.

The dental hygienist with restorative skills does not cease to provide

preventive services as suggested by Dr. Silver. Instead, she carries the preventive philosophy throughout all phases of dental care. Surely this is not folly.

*R. G. Romcke, DDS, DDPH
Director
Division of Dental Public Health
Prince Edward Island Department of Health
Charlottetown, PEI*

Medico-legal aspects of local anaesthesia

I would like to comment on the letter by Dr. T. W. McKean which appeared in the May issue of the Journal. Dr. McKean was taking issue with an article written by Lynda Hutchison on "The medico-legal aspects of local anaesthesia".

At the time the article was written Miss Hutchison was a second year dental student. Instead of being criticized, she is to be commended for a well-written, worthwhile and timely paper.

Dr. McKean called the publication of this paper "facetious" and suggested that only material relevant to Canadian experience and Canadian law be published in future. Is this not a rather limited and simplistic outlook? As our medical and legal confreres well know, what happens elsewhere can, and surely will, occur here ultimately. The fact that there has been no recorded previous litigation does not preclude future action.

Canadian clinical dentistry, in my opinion, does not differ significantly from that of the United States or Australia and thus our immunity from legal action in this area is derived from good luck rather than good management. In all areas of dentistry it behooves us to know what is being done in other countries.

It was with this intent, I am sure, that Miss Hutchison researched her fine paper dealing with a "foreign" and very difficult area for those of us outside the legal profession.

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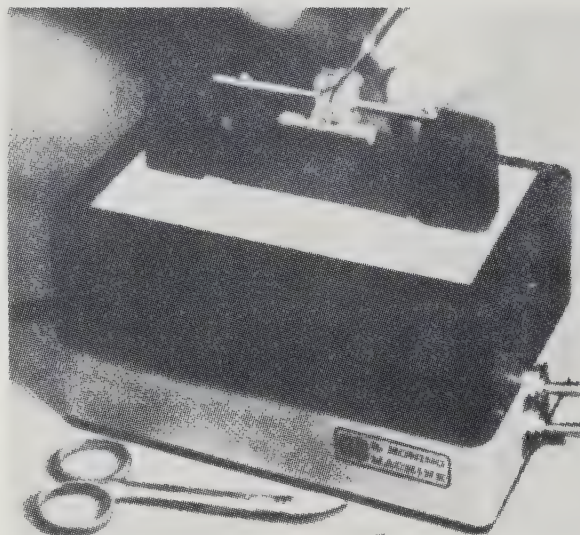


New Products

HONING MACHINE:

NOW YOU CAN SHARPEN IN SECONDS!

- Excavators
- Elevators
- Explorers
- Scissors
- Scalers
- Bone Files
- Chisels
- Hoes
- Hatchets
- Curettes
- Perio Knives
- Perio Scalers
- Spoon-type Instruments
- Gingival Margin Trimmers



This machine is shipped with a foot control switch leaving your hands free and prolonging the life of the machine. Includes 4 Rx hones, 2 Arkansas hones and a supply of RUB & RINSE Cleaner. Available from WEIL.

NEW Cavity Liner



CAVISOL

A ready-mixed liner which sets instantly, avoiding any delay in proceeding with the restoration. CAVISOL forms a very thin, yet firm insulation and is therefore ideal for class 3 and 5 preparations under silicate and composites. The active ingredients are Poly-styrene to seal the dentinal tube, Calcium hydroxide/Zinc oxide to create a chemical barrier against acids under silicate and phosphate cements.

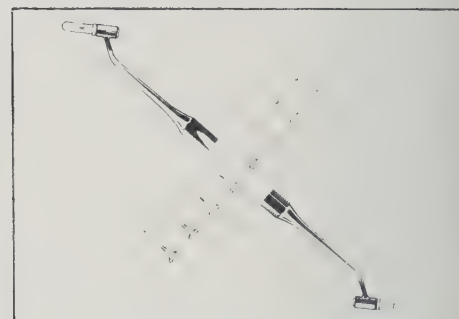
Calcium monofluorophosphate — the fluor penetrates the dentine and strengthens its resistance to acids, Diiodide dithymol stops bacterial growth. CAVISOL is packed in a 15ml. bottle. Available from WEIL.

RED/BLUE Articulating Paper



In either horseshoe, straight or curved handy sheets with no-smudge finger-tabs. The advantage of being red on one side and blue on the other is two-fold: Firstly, the second bite can be done with the reverse colour in order to distinguish the mark from the first registration. Secondly, gold is marked more readily with red. Red/Blue Articulating Paper is packed either 6 books of 12 sheets horseshoe or 12 books of 12 sheets straight or curved per box. Available from WEIL.

PLASTIC FILLING INSTRUMENTS for ALL Composites



A double-ended stainless steel handle holds a variety of well designed, easily interchanged plastic points, in a firm grip. The white plastic material of the points is sterilizable up to 150°C., will not stick to any of the composites and prevents discolouration of the fillings. The eight available styles, as illustrated, cover all of even the most critical requirements.

The set is packed in a kit with 2 handles and 8 x 10 points. Refill packages are also available — from WEIL.

NEW STERILIZING TUBING



A tough nylon, continuous tubing which cuts to any desired size, permits thorough sterilization of instruments sealed therein and maintains it for six months. This 'see-through' seamless material has great tensile strength, high resistance to tearing and accidental puncturing. The suggested Autoclave Indicator Tape to seal the package, assures that only sterilized instruments are stored and available at all times. The Nylon Tubing is supplied in widths of 2" (100' length), 3" (100' length), 6" (60' length). Autoclave Indicator Tape in 1/2" width (120'). Available from WEIL.



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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

Crossroads?

Your CDA operates on revenues it receives by way of grants from the provincial corporate members. In 1968, after studying a five year projection of anticipated expenditures to cover ongoing and expanded services for the Association's members, the Board of Governors agreed on the need for increasing the grants to a base of \$65.00 per licensed dentist. Now, five years later, eight corporate members do base their grants on this \$65.00 level, while grants from our two largest provinces are set at \$55.00 per dentist. The Association's operational costs have escalated faster than was anticipated in the five year projection and considerable criticism is now being levelled at the CDA for not serving its members better.

To add to an already impractical situation, we are told that governmental legislation in Ontario and Quebec will, by 1974, make it impossible for membership in professional associations, whether national or provincial, to be a condition of licensure. This will undoubtedly require the development of a different membership structure. Rather than the present membership, which represents 100 per cent of the dentists in Canada, the figures are certain to be less — perhaps considerably less. And the fewer the members, the lower the Association's revenue.

It is obvious then that the Canadian Dental Association and at least two of its corporate members are at an organizational crossroads. Which route should now be taken? The easier downhill

route leading to disintegration and ineffectiveness; or the tougher, steeper incline that promises strength and stature for the dental profession as it challenges the economic, social and political pressures being exerted upon it with ever increasing intensity?

These are questions the Association's members, particularly its Board of Governors, will have to answer in the coming months. Their answer will, no doubt, depend largely on the value they ascribe to the services presently being provided by the Association.

With this in mind, I thought it might be useful to the members to again identify some of the Association's programs and services in forthcoming issues of the Journal. My comments on each topic will be brief, factual and without personal evaluation. I propose to discuss the various topics in random order with no attempt to establish a priority rating.

This effort will be of maximum benefit if it develops into a two-way communication. To encourage this, I invite you to actively participate in this endeavour by indicating whether or not you think the specific service or program described in each issue is one which should be provided by your national Association. Your answers and comments — signed or unsigned, as you prefer — will be of great value to the Board of Governors for future program planning.

Please help by sending your "yes" or "no" answers, along with the main reason for your choice, to my attention at 234 St. George Street, Toronto, Ontario M5R 2P2. You can send in the answers each month or after several Journal issues if you prefer.

By this mechanism, all CDA members will have an opportunity to actively participate in shaping the future role of their national association.

Continued next page

\$45,000 GIFT FOR CFDE CAPITAL FUND

"Dr. Lorne E. MacLachlan of Ottawa has made a gift of \$45,000 to CFDE's Capital Fund campaign," it has just been announced by M. E. (Bud) Bower, Chairman of the Board of Trustees.

"The purpose of the gift is twofold," said Mr. Bower:

- "1. To establish the Lorne E. MacLachlan Endowment Fund for Teacher Training in Clinical Prosthodontics, Complete and Maxillo-Facial Prostheses Division."
- "2. To substantially assist CFDE's current campaign for A Million Dollar Capital Fund for dentistry."

In making this exceptionally generous gift Dr. MacLaughlan stipulated that the annual income from the Endowment Fund is to be divided equally between the following dental schools and used specifically for the above stated purposes:

University of Toronto
McGill University
Dalhousie University

Complete details of this important new Endowment Fund are now being finalized and will be announced in the near future.

"In the meantime," stated Mr. Bower, "the trustees of the CFDE wish to express their grateful appreciation to Dr. MacLachlan for this truly outstanding gift that will provide assistance in perpetuity for dental education."

"Capital Fund campaign contributions and pledges received to date total \$175,000," said Mr. Bower, "and Dr. MacLachlan's gift substantially increases this total to \$220,000. Thousands of pledge cards are still to be turned in — won't you send yours today?"

Please make an honest assessment of each topic and give us your views. The first topic is:

National Council and Committee Meetings

The main working groups in the Association are the councils. The number of members on the different councils, of which there are presently 13, varies according to the specific terms of reference set out for each particular council. In general, their membership includes representation from each provincial corporate body or from each district in Canada. The councils develop policy for the Board of Governors to accept, amend or deny.

The councils meet once or more annually at the national headquarters in Toronto and, in each case, the meetings constitute a national forum. Dentists from across Canada, at considerable personal sacrifice (they receive no honoraria for time missed from their offices) sit down together to discuss problems of mutual interest. The meetings provide opportunities for:

- Collectively working out solutions to the profession's problems
- Designing programs and services for all dentists in Canada
- Initiating the decision making process for the Association
- Appraising a wide range of situations touching on the health care field and determining their effect on individual provinces as well as on Canada as a whole
- Sharing and comparing professional experience
- Broadening individual viewpoints on dental issues
- Meeting confreres from all parts of the country

If the Association's council meetings were not held, there would be no common meeting ground where Canadian dentists from coast to coast could get together regularly for the purpose of helping each other find solutions to dentistry's problems, be they national or provincial. Dentists would undoubtedly lose a portion of their professional franchise.

Question 1

Do you believe the Canadian Dental Association should sponsor council meetings which provide an opportunity for elected dental representatives from all parts of Canada to meet together and to work at finding solutions to dentistry's problems for the betterment of the dental profession as well as the public it serves?

Please indicate "yes" or "no" with reasons for your answer.

National Convention

Vancouver gets ready to host 1973 CDA Convention

The 1973 National Convention is shaping up to be one of the best Canada has ever seen. Advance registrations are pouring in, indicating that Vancouver will see more dentists this October than anyone could have guessed. The promise of western hospitality and an excellent convention program are generating hundreds of delegates from eastern and central Canada.

The CDA National Convention will officially get underway with the formal opening ceremony at 7.30 pm on October 14. During this ceremony, awards will be presented to winners of the student table clinic contest and the Canadian Dental Research Foundation award will be conferred. Also, official greetings will be received from various organizations which maintain close ties with Canadian dentistry.

The formal opening ceremony will be followed by a rousing Vancouver Oktoberfest, complete with Bavarian music and barrels of beer. This is one party you won't forget!

President's Party

The 1973 President's Party will be a gala affair, honouring Dr. David K. Peters of St. John's Newfoundland. The party is scheduled for Tuesday evening, October 16, in the British Columbia Ballroom of the Hotel Vancouver. Music and dancing will follow a gourmet meal capable of pleasing the most discriminating palate. Dress is optional for this occasion. Tickets will go on sale soon to pre-registered delegates.

French scientific program features two top clinicians

The scientific program for French speaking delegates to the CDA National Convention in Vancouver was recently announced by Dr. Claude Chicoine, deputy chairman, scientific program (French portion). Two first rate clinicians, Dr. Pierre Desautels and Dr. Jacques Fiset, will present clinics in their individual specialties. Both presentations will be given in French and in English to allow all attending dentists to participate.

Dr. Desautels is presently engaged in research in the area of dental materials at the University of Montreal. He is a member of the International Association for Dental Research and a member of the Consulting Committee to The Standards Council of Canada. Dr. Desautels has also been working on the subject of dental materials and their specifications for the Canadian Dental Association.

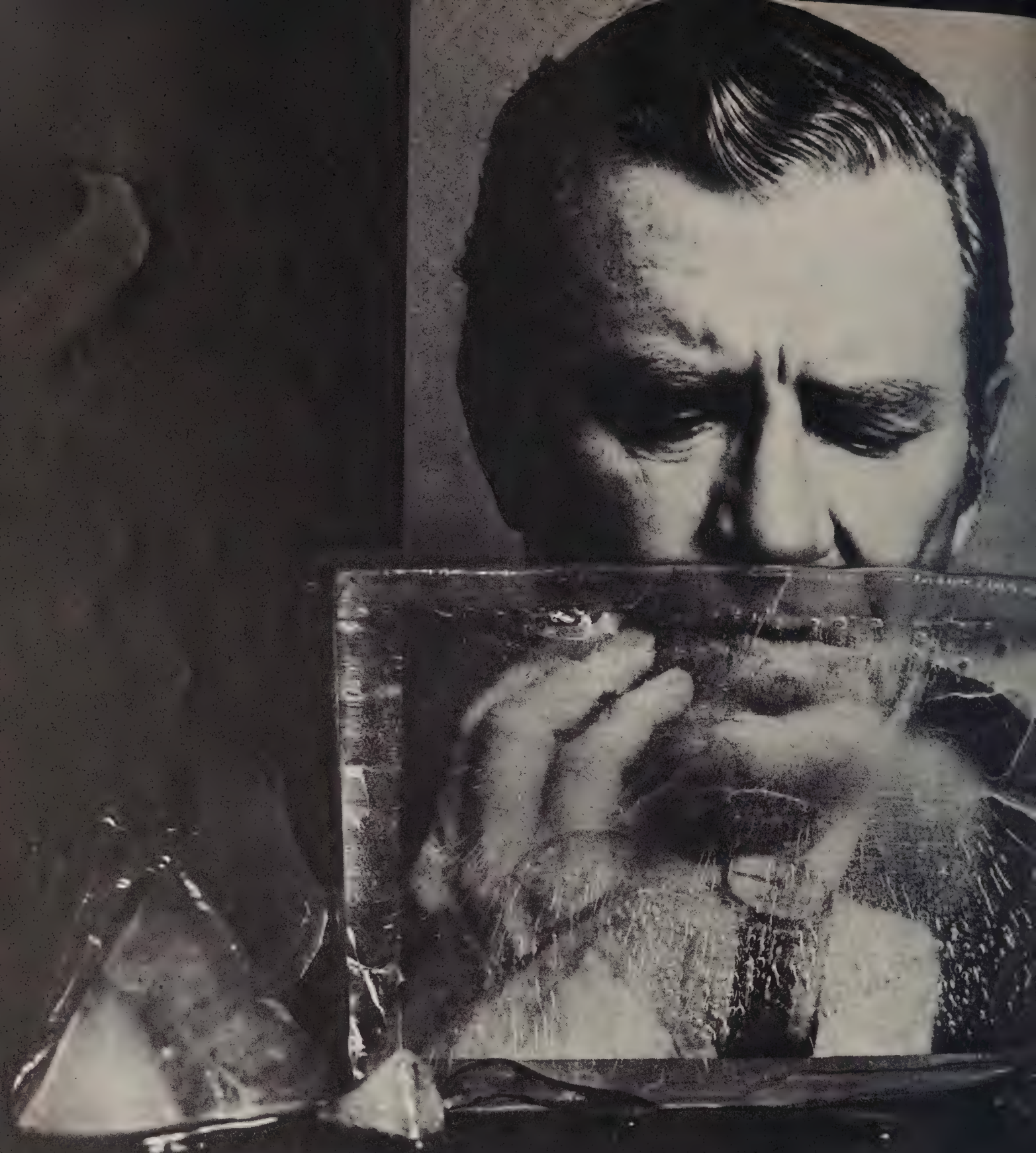
Educated at the University of Montreal and Indiana Purdue University, Pierre Desautels specialized in subjects relating to the use of materials in dental practice. His topic in Vancouver is "Clinical Evaluation of Restoration of Fractured Incisal Angles by Use of Etching Technique: 14 Months."

Dr. Jacques Fiset, Chairman of the Division of Removable Partial Dentures at the University of Montreal and past president of the Canadian Academy of Prosthodontics will deliver a clinic in his specialty entitled "Different Concepts Utilized in the Treatment of Terminal Dentitions."

Dr. Fiset's clinic will deal with extreme situations involving only a few debilitated teeth. Included in the presentation will be a classification of cases as well as a comparison and evaluation of the sleeve-coping, stud and the bar attachment with reference to the basic principles in partial denture construction. "Internal Clip" and "Ceka" attachments will be the primary consideration of his presentation.

Convention delegates who visit Vancouver's Stanley Park will find the collection of Indian Totem Poles in Totem Glade a major attraction. Discovered rotting away in various Indian villages in the coastal regions of British Columbia, the totems were brought to Vancouver and restored to their natural beauty by Mungo Martin, a chief of the Kwakiutl tribe. (Photo courtesy of the Canadian Government Travel Bureau).





INDICATIONS: Carbocaine (brand of mepivacaine) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS: Carbocaine is contraindicated in patients with a known hypersensitivity to the amide type local anesthetics or to methylparaben which is added to the multiple dose vial solutions.

WARNINGS: RESUSCITATIVE EQUIPMENT AND DRUGS SHOULD BE IMMEDIATELY AVAILABLE WHEN ANY LOCAL ANESTHETIC IS USED.

Usage in Pregnancy: Safe use of Carbocaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

Solutions containing a vasoconstrictor, particularly epinephrine or norepinephrine, should be used with extreme caution in patients receiving antidepressants of the triptyline or imipramine types or MAO inhibitors

because a severe prolonged hypertension may occur.

PRECAUTIONS: The safety and effectiveness of Carbocaine depend upon proper dosage, correct technique, adequate precautions, and readiness for emergencies.

The lowest dose that results in effective anesthesia should be used to avoid high plasma levels and serious undesirable systemic side effects. Injection of repeated doses of Carbocaine may cause significant increases in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slow metabolic degradation.

Tolerance varies with the status of the patient. Debilitated, elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their age and physical status.

Solutions containing a vasoconstrictor should be used cautiously in the presence of diseases which may adversely affect the patient's cardiovascular system. In persons

with known drug sensitivities or allergies Carbocaine should be used cautiously.

Serious cardiac arrhythmias may occur if preparations containing a vasoconstrictor are employed in patients receiving or following the administration of chloroform, halothane, cyclopropane, trichloroethylene, or other related agents.

ADVERSE REACTIONS: Adverse reactions result from high plasma levels due to excessive dosage, rapid absorption, or inadvertent intravascular injection. Hypersensitivity, idiosyncrasy, or diminished tolerance may also be the cause of reactions. Reactions due to overdosage (high plasma levels) are systemic and involve the central nervous system and the cardiovascular system.

Reactions involving the central nervous system are characterized by excitation and/or depression. Nausea, dizziness, blurred vision, or tremors may be followed by drowsiness, convulsions, unconsciousness, and possibly respiratory arrest.

the procedure
takes 15 minutes...

Why should
the thaw take so
much longer?

Consider these two facts:

1. Most of today's dental procedures are brief. Patients dislike having their faces numb for hours after they've left the office.
2. The modern local anesthetic solution—**Carbocaine 3%**—provides unsurpassed anesthesia that allows ample time for routine procedures, an average of 20 minutes *operating* anesthesia in the upper jaw and 40 minutes in the lower, but doesn't linger a great deal longer than necessary.

Carbocaine 3% adds this important dimension to patient comfort because it is fully effective by itself, without any help from a vasoconstrictor.

For longer duration, Carbocaine HCl 2% is combined with Neo-Cobefrin* (brand of levonordefrin) 1:20,000, a vasoconstrictor more stable than epinephrine and less potent in raising blood pressure.

UNIQUE
Carbocaine HCl **3%**
brand of **mepivacaine** HCl
without vasoconstrictor

**The modern local anesthetic
adequately effective by itself**

ctions involving the cardiovascular system include
tion of the myocardium, hypotension, bradycardia,
en cardiac arrest. Treatment of a patient with toxic
stations consists of maintaining an airway and
ring ventilation using oxygen, and assisted, or
led respiration as required. Supportive therapy of
divascular system consists of using vasopressors,
bly epinephrine. Convulsions may be controlled by
e of oxygen. If convulsions persist, the intravenous
stration in small increments of an ultra short-acting
rate (i.e., thiopental, thiamylal) may be used. If these
available, a short-acting barbiturate (secobarbital,
orbital) may be used. Intravenous barbiturates
only be used by those familiar with their use.
gic reactions are characterized by cutaneous
of delayed onset, or urticaria, edema, and other
stations of allergy. The detection of sensitivity by
sting is of doubtful value.

DOSAGE AND ADMINISTRATION: As with all local anes-
thetics the dose varies and depends upon the area to be
anesthetized, vascularity of the tissues, individual toler-
ance and the technique of anesthesia. The lowest dose
needed to provide effective anesthesia should be admin-
istered. For specific techniques and procedures refer to
standard dental manuals and textbooks.

For infiltration and block injections in the upper or
lower jaw the average dose of 1 cartridge will usually
suffice. Each cartridge contains 1.8 ml. (36 mg. of 2% or
54 mg. of 3%). This dose may be doubled if necessary
to effect anesthesia. The maximum dose should not exceed
3.6 mg. per pound of body weight.

Any unused portion of a cartridge should be discarded.
HOW SUPPLIED: Carbocaine (brand of mepivacaine) HCl
3% without vasoconstrictor—each ml. contains: Carbo-
caine HCl, 30.0 mg.; sodium chloride 3.0 mg.; and water
for injection. Methylparaben 1.0 mg. is added to the

solution and pH is adjusted with sodium hydroxide or
hydrochloric acid in multiple dose vials.

Carbocaine HCl 2% with Neo-Cobefrin (brand of levo-
nordefrin) 1:20,000—each ml. contains: Carbocaine HCl
20.0 mg.; Neo-Cobefrin, 0.05 mg.; sodium chloride 4.0
mg.; acetone sodium bisulfite, not more than 2.0 mg.;
and water for injection. Methylparaben 1.0 mg. and sodium
lactate 1.0 mg. are added to the solution and the pH is
adjusted with sodium hydroxide or hydrochloric acid in
multiple dose vials.

Both formulas are available in 1.8 ml. cartridges, cans of
50, to fit the Carpule* Aspirator; and in 50 ml. multiple dose
vials.

Sterling Drug Ltd. is the registered user of the trademarks
Carbocaine and Neo-Cobefrin (Trade Mark Reg.)

Cook-Waite

Cook-Waite Laboratories
Division of Sterling Drug Ltd.
Aurora, Ontario

Installation Luncheon

Dr. John Abra of Winnipeg will be installed as the 1973-74 president of the Canadian Dental Association during the Installation Luncheon on Wednesday, October 17. The luncheon will be held in the British Columbia Ballroom of the Hotel Vancouver. Registered delegates and their wives will be welcomed to this event and complimentary coupons will be made available soon to pre-registered delegates.

Of particular interest to convention delegates will be the award of the Association's highest honour to Dr. Harry M. Worth of Vancouver. Dr. Worth will be presented with an honorary membership in the Canadian Dental Association, in recognition of his outstanding service to Canadian dentistry. Dr. Worth is also one of the main clinicians on the 1973 scientific program.

Vitreous carbon implants theme of presentation

The latest progress with vitreous carbon implants will be discussed in slide/lecture presentation by Dr. Dale E. Grenoble and Dr. Ronald Voss during the CDA National Convention in Vancouver, October 14-17.

Dr. Grenoble is assistant professor of dental materials at the University of Southern California School of Dentistry and Dr. Voss is associate professor and chairman of the Department of Dental Materials at the same school.

The design and evaluation of an endosteal implant made from vitreous carbon will be presented. The results of a series of histopathological animal studies will be related to the tissue compatibility of the material and to features of the implant design.

A large scale human case study program has been conducted and the resulting surgical and restorative procedures developed during this research program are leading to exciting results. The lecture will concentrate on the practical aspects of patient selection and treatment planning coupled with restoration design.

Programs evaluated by the CDA Council on Hospital Services

The following list of programs evaluated by the Canadian Dental Association's Council on Hospital Services shows the status of the dental services

in the various hospitals as of March 1, 1973. A number of the programs have recently been resurveyed, but the results have yet to be evaluated.

Name of hospital	Program evaluated	Accreditation status awarded	Valid until
Children's Hospital, Vancouver	dental services	approval	February 1976
Vancouver General	dental services and rotating internship	provisional approval	February 1974
Winnipeg General	dental services	approval	June 1973
Winnipeg Children's	dental services and paedodontic internship	approval	February 1976
St. Joseph's London	dental services	approval	June 1973
Hamilton Civic Hospitals	dental services	provisional approval	February 1974
Toronto General	dental services	approval	June 1974
Doctors' Hospital Toronto	dental services	approval	June 1974
Scarborough General	dental services	approved	February 1975
Hospital for Sick Children, Toronto	dental services	approved	June 1973
New Mount Sinai, Toronto	dental services	approved	June 1973

The Association

Seek nominees for elective offices

President-elect John E. Abra invites nominations for the following elective offices in the Association's councils

which are to be filled at the 1973 meeting of the Board of Governors. Incumbents identified by an asterisk (*) are eligible for re-election; others are not eligible for re-election.

Nominations may be made only by members of the Board of Governors, council chairmen, presidents or secretaries of provincial corporate members

Name of hospital	Program evaluated	Accreditation status awarded	Valid until
Toronto Western	dental services	approved	February 1976
Ottawa Civic	dental services	approved	June 1974
Montreal General	dental services	approved	June 1973
Children's Hospital, Montreal	dental services and paedodontic internship	approved	February 1976
Royal Victoria, Montreal	dental services	approved	February 1975
Reddy Memorial, Montreal	dental services	approved	June 1974
Hôpital Notre-Dame, Montreal	dental services	provisional approval	February 1974
Hôpital Sainte-Justine, Montreal	dental services	provisional approval	February 1974
St. Mary's Memorial, Montreal	dental services	approval	November 1972 (will be surveyed in 1973)
Hôpital de l'Enfant Jésus, Quebec City	dental services	approval	February 1976
Victoria General, Halifax	dental services	approval	June 1973
Izaak Walton Killam, Halifax	dental services	approval	February 1975
Deer Lodge Hospital, Winnipeg	dental services	approval	June 1973
Shaughnessy Hospital, Vancouver	dental services	approval	June 1973
Dr. Chas. A. Janeway Child Health Centre, St. John's, Nfld.	dental services	approval	February 1976

Communications (see notes below)
L. Bosse, Montreal
I. Hrabowsky, St. Catharines*

Constitution and By-laws
H. Brouillet, Montreal*

Education
G. E. Decker, Edmonton*
D. R. Gratton, Grand Bend*
W. F. Hancock, Fort Qu'Appelle*
L. G. Mandin, St. Paul*
K. J. Paynter, Saskatoon

Ethics
R.M. LeBlanc, Montreal
W. K. Martin, Regina

Health Care
It will be recommended to the Board of Governors that the new Council on Health Care consist of one voting member from each corporate body; any of the incumbents on the present Councils on Auxiliary Services, Dental Services, Public Health and Preventive Dentistry, and/or any other nominees, are eligible for election to the new Council.

Insurance and Investment
C. L. Moran, Montreal*
R. Rasmussen, Calgary*
D. C. Steeves, Moncton*

Legislation
H. C. Bugden, Ottawa*

Nominations
H. Brouillet, Montreal*

A member of the Executive Council must be a member of the Board of Governors. The term of office of a member of the Executive Council is two years; consecutive tenure on this council is limited to three terms of two years each. The term of office of members of other councils is three years; consecutive tenure on such councils is limited to two terms of three years each (except for the Insurance and Investment Council). The term of office of members of the Council on Insurance and Investment is three years, renewable twice.

The new Council on Health Care is an amalgamation of the Councils on Auxiliary Services, Dental Services and Public Health and Preventive Dentistry. On the nine member Council on Education, at least four are active

and presidents or secretaries of CDA sections. Suggestions by the general membership may be made to any of the above named nominators. Official nominations should be received by July 15 and should be sent to John E. Abra, Chairman, CDA Council on Nominations, Suite 518, 404 Graham Avenue, Winnipeg, Manitoba, R3C 0L7.

President-elect
John E. Abra, Winnipeg, Manitoba

Chairman, Board of Governors
W. P. Munsie, Vancouver*

Executive
L. Bernier, Quebec
I. Hrabowsky, St. Catharines*

Clinical and Laboratory Studies Demonstrate:

Pearl Drops® Tooth Polish no more abrasive than the dentifrice most recommended by dentists themselves

Many members of the dental profession are concerned that certain products now being promoted as tooth "whiteners" present actual or potential danger to exposed tooth surfaces and gingival tissue.



Pearl Drops...

Produced no deleterious chemical or abrasive action

In a study performed by the Research Foundation of the University of Toledo¹, the effects of brushing with Pearl Drops were compared with water and with a well-known toothpowder. The test involved the laboratory equivalent of almost 10 years of brushing over the same spot—or more than 30,000 brush strokes. The conclusion: Pearl Drops Tooth Polish does not produce either chemical or abrasive action deleterious to tooth enamel.

Pearl Drops...

No more abrasive than the dentifrice most recommended by dentists

In ranking the abrasiveness of current dentifrices, a recent study in the Journal of the American Dental Association rated Pearl Drops no more abrasive than the dentifrice most widely recommended by dentists themselves.²

Pearl Drops...

Causes no irritation to the gingiva

Another study by the University of Toledo Research Foundation¹ was conducted with fifty female nursing students, chosen at random, who used only Pearl Drops for a period of four weeks. Once a week the gingiva of each student were carefully examined by a dentist. He looked especially for loss of stippling, red line at the gingival margin, swollen inter-dental papillae, and sloughing of tissue. As a result of these examinations, it was concluded that there was no irritation of the gingiva caused by using Pearl Drops Tooth Polish.

Pearl Drops...

Can safely replace regular toothpaste or toothpowder

All available evidence points to the fact that Pearl Drops can be used on a daily basis instead of regular toothpaste or toothpowder. It is a tooth cleanser and whitener you can recommend to your patients with confidence in its safety.

Carter Products

Division of Carter-Wallace N.S. Inc.,
250 Bloor Street East, Toronto, Canada

1. Studies on file, Carter-Wallace, Inc.

2. Council on Dental Therapeutics: Abrasivity of Current Dentifrices, JADA 81:1177, 1970.

faculty members of Canadian dental schools, and at least three have no direct affiliation with a school. Two members of this council are drawn from recommendations submitted by each of the Association of Canadian Faculties of Dentistry and the National Dental Examining Board of Canada; one is drawn from recommendations submitted by the Royal College of Dentists of Canada; and one is a provincial registrar.

The Council on Insurance and Investment consists of seven members representing British Columbia, the Prairie Provinces, Ontario (three members), Quebec and the Atlantic Provinces. The Council on Nominations consist of three members and the president-elect is its chairman. Nominations for a member of this council are made from the floor at the Board of Governors meeting.

It will be recommended to the Board of Governors that the terms of reference for the Council on Communications be amended, changing the name to the *Council on Information Services* and the membership from 7 to 5. If the Board approves this recommendation, no election will be required as the terms of two members automatically end at the 1973 annual meeting.

Canada and the Provinces

Ontario dentists want denticare for the aged

The Ontario Dental Association wants dental care for the elderly included in plan.

The association's board of governors decided, during its annual meeting in Toronto May 13, that the aged should be given equal priority with children in insured care.

Earlier this year Dr. Irwin Lightman, chairman of the ODA's committee on geriatric dentistry, estimated there were 200,000 persons 65 years and over in Metro Toronto alone and about one-third were getting inadequate dental care. There are about 50,000 pensioners in the province of Ontario.

Ontario Dental Association looks ahead to prospect of voluntary membership

The Ontario Dental Association will enter into a new era in its history in the next year or two when it becomes a voluntary organization. Membership will no longer be an automatic requirement for licensed dentists in the province.

This change will come about as a result of the Ontario Government's new Health Disciplines Act. This new Act, which sets up governing bodies for the five major health disciplines, is expected to be presented to the legislature during its current session. However, the act will probably not be proclaimed until late this year.

For dentistry, a major effect of the new act will be to complete the separation between the Royal College of Dental Surgeons of Ontario as the licensing body and the ODA as the organizational body. The RCDS will represent the government and the public and the ODA will represent the profession.

Depending on the legislative timetable, the association may go on a voluntary basis in 1974, or the actual transition may be delayed until 1975.

Association executives are presently in the process of mapping out plans for the conversion. The ODA Board of Governors has approved the principle of conjoint membership at the three levels of professional organization — local, provincial and national. Under this principle, a single membership fee will entitle dentists in the province to the benefits of membership in their local societies, the ODA and the CDA.

Quebec plans to make French compulsory for all professions

Anyone entering a profession in Quebec after July 1, 1976, will have to have a working knowledge of the French language under amended legislation recently proposed by the province's Liberal government.

The new language requirement, sure to be adopted as it has the support of all political parties in the province, will

affect 37 professions including dentists, doctors, lawyers, architects, engineers, nurses and social workers.

Persons working in a profession before the July 1 deadline will be allowed to continue working in Quebec even if they know no French.

The legislation, tabled by Social Affairs Minister Claude Castonguay, would allow a certain number of unilingual English persons to exercise their profession in Quebec for a limited period of time or under restrictive conditions.

The professional corporations that control access to Quebec professions would be allowed to issue "temporary" permits for up to one year. The exemption could be renewed only with cabinet approval and then only in cases where "the public interest demands it."

A "restrictive permit" could be granted to "a Canadian citizen who is a member of a similar corporation in another province," the legislation stipulates.

Persons working under "restrictive permits" would be barred from having any contact in their jobs with the public and would be obliged to work for one employer only.

CMA launches new newspaper for the Canadian health care team

On September 1, 1973, the first issue of "Mediscope" will roll off the presses. This new newspaper, published by the Canadian Medical Association, will be designed to serve as the much needed communications vehicle for Canada's entire health care team.

The launching of this exciting new publication was announced on May 30 in Montreal at a meeting called by the CMA. Representatives from the fields of medicine, nursing, pharmacy, dentistry and hospital administration were invited to attend. Dr. W. G. McIntosh, CMA executive director, and Dr. Marcel Hébert, editor of the Quebec Dental Journal, represented the dental profession.

Outlining the purpose and concept of "Mediscope", Dr. G. Gingras, president of the Canadian Medical Association, stated: "To meet growing public expectations, to provide the quality and quantity of health care

CFDE Capital Fund Campaign is now in full swing

The Canadian Fund for Dental Education's campaign to establish a million dollar capital fund for dentistry in Canada is now in full swing. More and more dentists from coast to coast are exhibiting increasing enthusiasm for the concept of the campaign and are proving their support with generous donations.

Although the campaign is only a few months old, Dr. J.E. Abra of Winnipeg, national campaign chairman, reports that 17 per cent of Canada's dentists have already contributed to this important charitable foundation.

"While this is a very promising start," says Dr. Abra, "we can't afford to become lax in our efforts to encourage more dentists across the country to participate in this highly important project. More than 900 Canadian dentists are volunteering their time and energy to call upon their confreres for capital donations for this fund that is controlled and administered by the dentists of Canada."

Saskatchewan leads the way

At the present time, Saskatchewan's enthusiasm for the capital fund campaign is unmatched by any other province. Under the capable leadership of Dr. W.K. Martin, the provincial campaign committee has already achieved 88 per cent of its financial goal with 120 of the province's 243 dentists having made a contribution.

Solid support for the campaign is also evident in New Brunswick where Dr. M.J. Crompton reports the

receipt of pledges totalling 71 per cent of the province's financial goal.

Newfoundland has passed the halfway point in its quest for capital fund support. According to the provincial campaign chairman, Dr. W.J. Dwyer, the province has attained 57 per cent of its goal.

Manitoba follows close on the heels of Newfoundland with 45 per cent of its goal achieved. Dr. M.J. Snidal is campaign chairman for Manitoba.

From the west we swing out east again where Nova Scotia, under the chairmanship of Dr. G.M. Jensen, and Prince Edward Island, under the chairmanship of Dr. J.R. Robertson are in a tight race in rallying the dental profession around the CFDE cause. Nova Scotia reports contributions totalling 39 per cent of its goal and Prince Edward Island has achieved 34 per cent of its total.

Ontario dentists have now contributed 13 per cent of their campaign goal, according to provincial chairman Dr. R. G. Ellis.

British Columbia and Quebec got off to a slow start but enthusiasm for the capital fund is becoming more and more evident in both provinces. Dr. H.G. Pettapiece, chairman for BC, reports that his province has reached the 8 per cent mark and Quebec chairman, Dr. H. Brouillet, reports that his province has achieved 7 per cent of its goal.

Total cash and pledges to the CFDE's million dollar capital fund now exceed \$175,000. A large number of dentists across the country have made exceptionally generous donations. To date, there are 360 gifts of \$200 or more; 45 gifts of \$500 or more, and 29 of \$1000 or more.

that we are capable of, within the budgetary resources available, the term 'The Canadian Health Care Team' must become more than a vague philosophical phrase. Health workers can no longer afford to function in competition with, or in isolation of the goals and activities of their colleagues. Mediscope's primary goal will be to serve as a communications vehicle for the health care team and its various components; to further the evolution of a dynamic, functioning health care team in Canada."

The 16 page bilingual newspaper will be published initially on a once a month basis and, on January 1, 1974, will begin twice a month publication. It will concentrate on the delivery of health care, the economics of health services, news, medico-political affairs and health profession activities. Viewpoints and positions that have signi-

ficance for all components of the health care team will receive particular attention.

Milan Korcok, one of Canada's foremost medical science writers, has been appointed editor of "Mediscope."

International Items

Queen Elizabeth to be patron of FDI Congress in 1974

The Organizing Committee for the 1974 Congress of the Fédération Dentaire Internationale has announced that Queen Elizabeth will be patron of the Congress. A letter from the Keeper

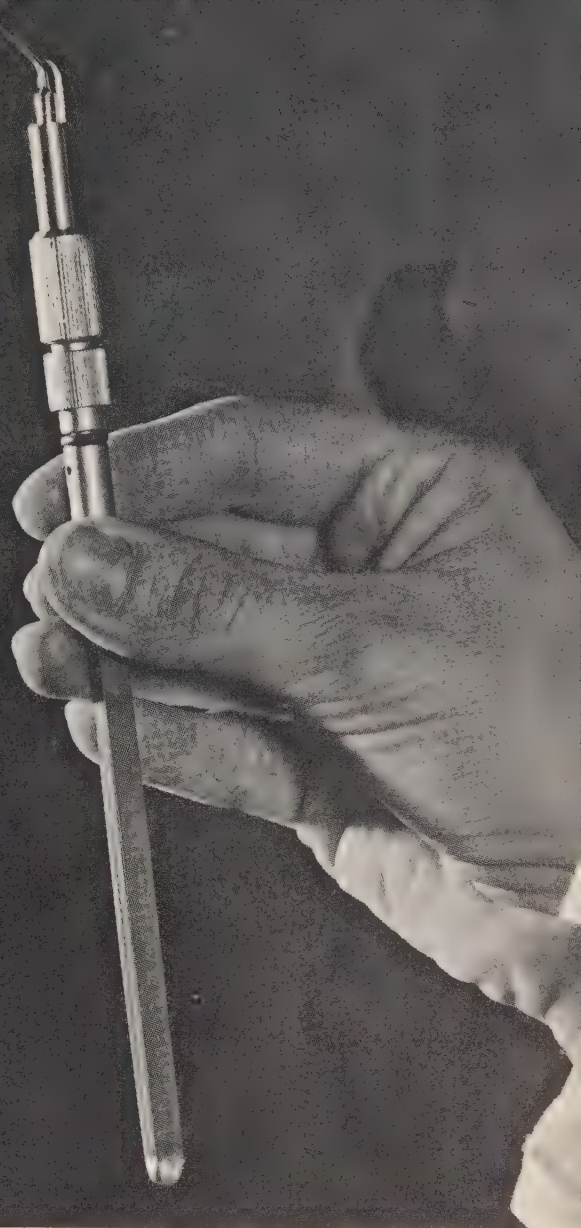
of the Privy Purse says: "Her Majesty has been graciously pleased to grant her Patronage to the 62nd World Dental Congress to be held in London, on September 8-14, 1974."

The Congress, hosted by the British Dental Association, will take place in and around the Royal Festival Hall. The main theme of the scientific program will be "The dentist's role in a changing society", covering particularly the sociological and economic aspects of dental care.

Canadians attend ADA management conference

The American Dental Association's 24th annual management conference was held in Chicago, June 4 to 6. More than 150 secretaries and executive

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YOUR SECURITY

This is the tenth of a series of articles on insurance and investment programs available through the Canadian Dental Service Plans, Inc, to the dental profession.

Here are five useful tips for building up an estate with retirement in mind.

1. Use the government's rules.
2. Decide on a realistic goal that can be reached and systematically shoot for it.
3. Don't be greedy; aim for a reasonable return.
4. The earlier you start building the better.
5. Make use of hindsight to plan your future.

1. Use the government's rules

It is becoming more apparent as time goes on that government is trying to force us into putting our money into retirement savings funds by making them increasingly more attractive and other methods of saving increasingly less attractive. The recent addition of taxes on dividend interest from insurance policies, capital gains taxes, effective decrease in the higher tax brackets of the 20 per cent dividend credit on Canadian corporations, changes in depre-

ciation allowances on real estate, etc, are cases in point. For example — if a man had \$4,000 investment income and was in the 50 per cent tax bracket he would have to pay \$2,000 tax. It would be necessary for him to earn an additional \$4,000 net income in order to have the \$2,000 to pay the tax. If he placed the \$4,000 in a retirement savings fund his net income is reduced by this amount and thus his tax would be the same as though he never had the investment income.

At present it is possible to invest 20 per cent of your income or \$4,000, whichever is the least, in retirement savings. This money is locked up and tax exempt until taken out which must be before your 71st birthday. When it is de-registered it becomes taxable as income. It can be amortized over a period of years in an annuity or taken out in smaller amounts yearly before the 71st birthday by transferring such amounts tax free to another fund and cashing it out, at which time the latter amount becomes taxable. Since the funds are locked in they encourage saving and discourage impulse withdrawal and a person cannot be sued for these funds.

It is possible to administer your own retirement savings fund but the carrying charges of these is no less, and in most cases more, than the cost of administering a retirement savings fund by a trust company. The cheapest administration cost that you can buy is through the CDA Retirement Savings Plan which is an effective 1/2 per cent per year or to be exact 1/24 per cent per month of

officers of the various state dental associations turned out for the three day session, along with Dr. Gordon Watson, executive director of the ADA and his senior staff members. Six representatives of Canadian dentistry were also in attendance. They were: Dr. William G. McIntosh, executive director of the Canadian Dental Association; Mr. Ken L. Croft, managing director of the College of Dental Surgeons of British Columbia; Dr. Charles E. Gosselin, president, and Dr. Marcel B. Archambault, registrar, of the College of Dental Surgeons of the Province of Quebec; Mr. Ian Cato, executive director of the Ontario Dental Association; and Dr. Kenneth F. Pownall, registrar and secretary-treasurer of the Royal College of Dental Surgeons of Ontario.

Dental Organizations

Canadian Academy of Oral Radiology formed

In January of this year the Canadian Academy of Oral Radiology was founded in Toronto. Its stated aims are to advance the art and science of oral radiology in Canada, and thereby maintain and improve the health of Canadians.

The founding executive are: Dr. H. G. Poyton, Toronto, president; Dr. J. A. Reid, London, president-elect; Dr. A. Ruprecht, London, secretary; and Dr. D. W. Stoneman, Toronto, treasurer.

Anyone interested in membership should write to Dr. A. Ruprecht, Faculty of Dentistry, Division of Oral Radiology, University of Western Ontario, London.

Fluoridation

Fluoridation advances

Georgia and Nebraska recently became the eighth and ninth states respectively to require fluoridation for most cities, and Boston, one of the few unfluoridated major US cities, has announced plans to implement fluoridation by 1976.

which 40 per cent goes to Royal Trust Company for management fees, 20 per cent to advertising and promotion, and 40 per cent to CDSPI for collection and accounting procedures.

Even though it is improbable that the average dentist would want to, it is possible, as will be shown later, to answer all your retirement needs with this vehicle. These funds become part of your estate upon decease but can be transferred tax free to the spouse's estate at which time they may be taken out as an annuity and become taxable as such.

2. Decide on a realistic goal that can be reached and systematically shoot for it

A question often asked is "how much do you need for retirement?" A colleague of ours was told by a trust company adviser that he already had more than he needed and to sell some and go on a long holiday. However, I am sure this is an exception. Naturally the amount you will need will depend on the manner in which you intend to live after retirement. There was a time when a third of your final earnings before retirement was considered adequate. The experts are now suggesting you should shoot for 75 per cent of your final earnings. With inflation progressing the way it is it will probably never be realistic to have all your savings in a fixed income annuity. Annuities can now be bought that adjust to cost of living but the better way to hedge inflation is to keep some ownership in real property or common stocks. It is

also unrealistic according to trust company advisers to have a goal so high that you live off the income. This just leaves you with a large estate to be left to your children probably long after they have any real need for it.

Annuity rates vary from week to week and anyone planning on retiring should have someone shop the market for them. At the present time one should expect to buy at least \$1,000 a year income for every \$10,000 invested at age 65. The amount will vary according to age, years guaranteed, variable adjustments for cost of living, etc.

Getting back to the question of how large an estate you would need to realize this, a realistic figure today for a married man with a family might be \$250,000. With the present rate of inflation this could be unrealistic in 10 or 20 years so there is a need to review the situation periodically just as it is wise to assess your worth every year. Some of the value of your estate will be built up in real estate — house, summer home, etc. If on retirement you intend to maintain your home, etc, your needs would obviously be more than if you sold and lived in an apartment.

A simple goal then would be ownership of home, retirement savings, plus enough insurance while your family is young to make up the difference between your worth and your estate needs. Obviously systematic savings and reduction of principle by mortgage payments will increase worth and eventually allow reduction of insurance needs.

Tips 3 and 4 will be discussed in the next article.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on May 31, 1973:

Guaranteed Fund \$10.184;

Fixed Income Fund \$13.939;

Common Stock Fund \$28.458.

Total assets (market value) of the plan were \$15,343,854.08.

The following portfolio purchases and sales occurred during the preceding month: bought 27,776 units CIF Conventional Mortgage Fund and \$1,300,000 Aluminum Co. of Canada note; sold 1,000 shares Honeywell, 3,000 shares Revlon, 8,100 shares

Westburne International and \$1½ million Consumers' Gas note.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St., Toronto, Ont. M5R 2P1.

Deaths

Dinniwell, Albert Raymond. 65, Hamilton, Ont. University of Toronto, 1937. 31-5-73. Survived by Beatrice (wife); Edward (son); and Mrs. Dianne Jordan (daughter).

Dinniwell, Robert Alfred. 80. Hespeler, Ont. Royal College of Dental

Surgeons of Ontario, 1923. 15-5-73.

Ledger, William Herbert C. 66. Renfrew, Ont. University of Toronto, 1931.

Murdock, Charles Willis. 51. Kapuskasing, Ont. University of Toronto 1953. 13-5-73. Survived by Doris (wife); Robert and Bruce (sons); and Stewart and Kenneth (brothers).

Redding, Herbert D. 66. Lethbridge, Alta. University of Alberta, 1937. 21-2-73. Survived by Kathleen (wife); Ralph, Keith and Neil (sons); and Sharon (daughter).

White, Arthur Clenden. 87. Galt, Ont. Royal College of Dental Surgeons of Ontario, 1914. 16-5-73. Survived by Lloyd and Irwin (sons), and Mrs. E. Ross Mills (daughter). Associate member CDA.

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Le Congrès national

13 octobre à l'hôtel Vancouver de Vancouver, C.B. Tous les membres de l'Association y sont invités.

Le Congrès national de l'Association dentaire canadienne débutera le dimanche, 14 octobre, en soirée et se poursuivra jusqu'au mercredi, 17 octobre prochain.

Invasion massive de Vancouver par les dentistes

En octobre prochain, les dentistes de tous les coins du Canada envahiront Vancouver afin de participer au Congrès national de l'ADC. Les organisateurs attendent l'arrivée de plus de 3,000 congressistes. A cette fin, les dentistes de la Colombie Britannique sont à mettre sur pied un programme scientifique de premier ordre et réservent à leurs invités la chaude hospitalité de l'ouest.

Comme par les années passées, le programme comporte un ensemble équilibré de sessions d'études enrichissantes et d'activités sociales propices à la rencontre de confrères et de vieux et nouveaux amis.

Le Congrès national ouvrira officiellement ses portes le dimanche 14 octobre. Après la cérémonie inaugurale, les délégués seront invités à se divertir en participant à un Octoberfest bavarois. Les fatigues du voyage s'envoleront par enchantement et cette détente agréable permettra aux délégués de se retrouver frais et dispos à l'inauguration du programme scientifique, lundi matin.

Réunion annuelle 1973 du Conseil des gouverneurs

La réunion annuelle 1973 du Conseil des gouverneurs de l'Association dentaire canadienne aura lieu du 11 au

Programme de la conférence

Des conférenciers de premier plan donneront aux congressistes l'occasion de prendre connaissance des plus récents travaux de recherche. Les applications pratiques des recherches à la dentisterie moderne, ainsi que les aperçus théoriques qui s'en dégagent seront à la portée des délégués. Il n'est pas exagéré d'affirmer que la réalisation du programme projeté constituera l'événement le plus intéressant, le plus enrichissant et le plus mémorable jamais offert dans les congrès antérieurs.

Le programme formel sera complété par des activités omnivalentes comportant des ateliers, des cliniques de table et des films en primeur.

La réception présidentielle, événement principal du programme social au Congrès, aura lieu à l'Hôtel Vancouver, le mardi, 16 octobre. La salle de bal British Columbia, étincelante de lumières, chatoyante sous l'animation des toilettes féminines, laissera un souvenir impérissable. Un repas de gourmet, accompagné d'un spectacle de grande classe, suivi d'un bal, couronnera ce gala en l'honneur du docteur David K. Peters, président national de l'ADC.

Les organisateurs de Congrès national de 1973 attendent une assistance dépassant en nombre celle des années passées. Des 3,500 délégués prévus, 1,200 viendront de la Colombie-Britan-

nique. Comme le programme féminin s'annonce de premier choix, les responsables de l'événement comptent que la plupart des délégués seront accompagnés de leurs épouses.

Mentionnons aussi que plusieurs organismes dentaires tiendront leurs assises durant la même période. Parmi ceux-ci, citons le Collège royal des dentistes du Canada, l'Académie de périodontie, l'Association des orthodontistes, la Société d'odontologie médico-légale, l'Académie des endodontistes, la Société des dentistes hygiénistes et le Collège international des dentistes. De plus, les hygiénistes dentaires et les infirmières dentaires tiendront leurs congrès nationaux dans des immeubles voisins.

Air Canada, transport officiel de l'ADC

Vancouver 1973

Le Comité d'organisation du Congrès national a nommé Air Canada "Transport officiel" au service du Congrès national 1973 et sollicite votre collaboration pour donner suite à cette entente. Air Canada verse une contribution substantielle au budget du Congrès, ce qui a permis au Comité d'éviter de majorer les frais d'inscription. L'entente avec Air Canada n'interdit pas aux délégués de négocier des contrats de voyage en groupe avec Air Canada, de se procurer des billets de visites organisées etc. En conséquence, le Comité vous recommande fortement d'emprunter les services d'Air Canada. L'ADC compte sur votre appui.

Un radiologiste présentera une communication au Congrès national de l'ADC

Le docteur M. Worth, chargé de cours en radiologie à la Faculté de dentisterie de l'université de Toronto, présentera une clinique sur "Les mécanismes des maladies des maxillaires, des points de vues des dentistes et des corrélations radiologiques correspondantes," au cours du Congrès de l'ADC qui sera tenu à Vancouver du 14 au 17 octobre 1973.

La communication du docteur Worth comportera une description succincte de l'anatomie concernée de l'os, et l'exposé des modifications susceptibles de survenir dans les tissus. Il s'attachera surtout à considérer les principales maladies dentaires, décrivant les modifications réelles qui surviennent, tout en reliant ces phénomènes aux caractéristiques qui apparaissent dans les radiographies. La présentation sera accompagnée d'une revision, sous forme de projections radiographiques. Elle touchera aussi les infections aiguës et chroniques (comprenant l'évolution de l'abcès) granulomateuses, les kystes et la périodontoclasie prenant en considération les états qui imitent ces atteintes, et qui sont susceptibles d'être confondues avec les affections authentiques. Parmi ces dernières mentionnons l'ostéofibrose périapicale, l'histiocytose X et les tumeurs.

En plus de donner des cours dans plusieurs facultés de dentisterie, le docteur Worth est rattaché, en qualité de radiologiste consultant, à l'hôpital des enfants malades de Toronto. Il est aussi consultant à l'hôpital Shaughnessy, ministère des Anciens combattants à Vancouver, C.B. et à l'Ecole de dentisterie de l'Université de Washington à Seattle, Washington. Le docteur Worth est membre à vie de l'Association canadienne des radiologistes et Fellow du Collège royal de médecine du Canada.

Les révélations du visage

Le docteur Bert J. Levin, orthodontiste, présentera une clinique intitulée "What Is In a Face". La conférence démontrera comment l'examen de routine des caractéristiques faciales permet d'établir plus facilement le diagnostic différentiel entre les cas plus ou moins difficiles de protusion antérieure et de malocclusion.

L'importance de l'équilibre musculaire facial dans les traitements dentaires feront l'objet des considérations du conférencier. Le docteur Levin est membre de la Charles H. Tweed Foundation for Orthodontic Research et il est directeur de la Section d'orthodontie, au Service dentaire du New Mount Sinai Hospital de Toronto.

L'Association

Le docteur Grainger nommé rédacteur en chef du Journal de l'ADC

Le docteur Robert M. Grainger a été nommé rédacteur en chef du Journal de l'Association dentaire canadienne. Il se joindra au personnel du secrétariat général le 1er juillet 1973.

Le docteur Grainger est actuellement directeur de recherches au service de l'Association des Collèges médicaux à Ottawa, poste qu'il détient depuis 1969.



R. M. GRAINGER

En 1968, il fut nommé directeur adjoint des programmes extramuros de l'Institut national de recherches dentaires rattaché au National Institute of Health du ministère de la Santé et du Bien-être social des Etats-Unis, à Bethesda, Maryland. Auparavant, le docteur Grainger avait dirigé la clinique dentaire de l'Université de la Colombie-Britannique où il donna des cours tout en dirigeant les recherches en épidémiologie et les applications par l'ordinateur. De 1958 à 1967, il fut professeur d'épidémiologie et président de la Division de recherches à l'Université de Toronto.

Le docteur Grainger a toujours manifesté une activité incessante pour les affaires dentaires. Il présida le sous-comité du gouvernement canadien chargé de recueillir les statistiques de santé dentaire et de maintenir à jour l'indice national de la santé dentaire.

Sur le plan international, il fut président d'un comité chargé de la création et de l'analyse des concepts

de la clinique et président d'un comité consultatif de l'Organisation mondiale de la santé, responsable d'élaborer un système d'épidémiologie dentaire.

Aux Etats-Unis, il fit partie de comités consultatifs rattachés à deux instituts nationaux: le Dental Project Committee et le Dental Study Section. Il fut aussi dentiste consultant auprès de la Food and Drug Administration et du National Center for Health Statistics.

Le docteur Grainger est aussi l'auteur de plus de 55 communications, monographies et manuels. Il obtint un diplôme dentaire de l'Université de Toronto en 1943, Il détient aussi un diplôme en hygiène dentaire publique et un MScD en épidémiologie de la même université.

En occupant son nouveau poste au secrétariat général, le docteur Grainger partagera son temps entre la rédaction du Journal et le Bureau des statistiques dentaires de l'ADC.

Le Conseil de la communication insiste sur la collaboration avec les membres sociétaires

Les rapports entre l'Association dentaire canadienne et ses membres sociétaires, touchant le programme de relations et d'information publiques, occuperont un rang prioritaire dans le programme de la réunion du 25 avril du Conseil de la communication de l'ADC.

En formulant l'une des principales propositions de la session, le Conseil fit ressortir l'importance d'établir des relations étroites de travail avec les membres sociétaires afin de mettre en valeur les programmes de relations publiques de la dentisterie, tant sur le plan provincial que sur le plan national. Le Conseil a résolu d'établir une collaboration étroite entre le Bureau d'information publique et les membres sociétaires chargés d'information publique, précisant que l'objectif premier de cette collaboration soit de fournir à l'Association l'occasion d'apporter une contribution additionnelle aux programmes de relations publiques provinciaux, quand cette contribution y présentera des avantages."

Afin de mettre cette proposition à exécution, le Conseil de la communi-

cation indique la marche à suivre suivante:

1. Le chargé de relations publiques de l'ADC se mettra en communication avec ses homologues provinciaux afin de déterminer la nature et l'envergure de leurs programmes d'information actuels, les domaines où ils désirent établir des programmes de relations publiques, et les domaines où ils souhaitent l'assistance du Bureau de relations publiques de l'ADC.

2. A partir de ces rapports avec les représentants provinciaux, le chargé de relations publiques de l'ADC déterminera les domaines où l'apport de l'Association nationale pourra sembler utile.

3. Il se propose par la suite de préparer un programme national de relations publiques conforme à tous les besoins de la profession pour tout le Canada.

4. Il pourra aussi discuter, avec les intéressés, des problèmes de relations publiques spécifiques à chaque province et, le cas échéant, offrir son concours.

5. Après avoir déterminé les domaines de nature provinciale qui présentent de l'intérêt au niveau national, le Bureau d'information publique de l'ADC s'attachera à mettre sur pied l'organisation d'une conférence nationale de la communication, afin d'étudier plus avant les moyens de promouvoir les relations publiques parmi les membres de la profession dentaire au Canada.

Avertissement du Conseil des recherches concernant les nécessaires pour la réparation des dentiers à la maison

Le Comité des normes concernant les matériaux et les dispositifs dentaires du Conseil des recherches de L'ADC a émis la déclaration suivante touchant les nécessaires pour la réparation et le rebasage des dentiers à la maison.

Il semble qu'un grand nombre de personnes utilisent des nécessaires que l'on peut se procurer facilement pour la réparation des dentiers brisés et l'application des procédés de rebasage que l'on peut effectuer soi-même. On a démontré que ces procédés peuvent être virtuellement dangereux surtout pour les patients. Malheureusement, la

publicité sur ces matériaux ou le mode d'emploi qui les accompagne sont souvent mensongers ou trompeurs. Contrairement aux renseignements fournis avec ces nécessaires prétendant qu'ils sont inoffensifs et faciles à utiliser, il est prouvé manifestement qu'il n'en est rien. Certains matériaux ont produit des effets contraires sur les dentiers, en diminuant sérieusement la résistance transversale du matériau de base de ces derniers. De plus, la plupart de ces matériaux contiennent des agents plastifiants et des solvants susceptibles d'irriter les tissus avec lesquels ils entrent en contact. Ils peuvent aussi causer une résorption grave de l'os sous-jacent quand le patient n'effectue pas correctement le rebasage.

En certaines circonstances et à des fins temporaires, des raisons peuvent justifier l'usage de ces matériaux en attendant le moment de pouvoir obtenir des services professionnels. Toutefois, il importe que la publicité mensongère et l'étiquetage de ces produits soient contrôlés par l'addition d'un avertissement signalant les risques éventuels qu'ils comportent et limitant leur usage aux cas d'urgence, en attendant de pouvoir consulter un dentiste.

Le Conseil d'enseignement recommande l'approbation de deux nouvelles spécialités

Le Conseil de l'enseignement de l'ADC recommandera au Conseil des gouverneurs la reconnaissance de deux nouvelles spécialités: la santé dentaire publique et la radiologie buccale.

La demande de reconnaissance de ces deux spécialités du domaine de la dentisterie a été étudiée par le Conseil au cours de la réunion de trois jours, du 30 avril au 2 mai 1973, tenue au secrétariat général. Le Conseil décida que les demandes proposées au nom de la santé dentaire publique et de la radiologie buccale étaient conformes aux six critères stipulés dans "Les conditions exigées pour obtenir l'approbation d'un domaine particulier de la pratique dentaire."

Le Conseil de l'enseignement a aussi décidé de dissoudre le Comité des spécialités formé l'an dernier pour assumer la responsabilité d'étudier les

demandes réclamant l'existence de nouvelles spécialités et de proposer les mesures appropriées. Le Conseil justifie sa décision par le fait que les questions relatives à la reconnaissance de nouvelles spécialités exige la considération de tous les membres du Conseil.

Au cours de la même réunion, le Conseil adopta une autre proposition destinée à inclure la dentisterie de restauration sous une nouvelle définition de la prothèse dentaire. A ce sujet, le Conseil convient de recommander au Bureau des gouverneurs l'approbation de la définition telle qu'amendée ci-après:

"Conséquemment la spécialité en prothèse dentaire comprendra les fonctions suivantes:

1. Fournir des substituts appropriés à la section coronaire des dents.

2. Remplacer les dents et les structures buccales manquantes.

3. Mettre en corrélation les surfaces triturantes afin d'assurer des fonctions normales.

4. Appliquer le traitement de prothèse dentaire aux patients qui ont subi des difformités bucco-faciales.

5. Au besoin, d'autres traitements auxiliaires peuvent s'ajouter à ces services dans le but de compléter ou d'assurer l'efficacité de ces restaurations."

Le Canada

L'ACDQ rejette l'offre gouvernemental et le président Hubert LaBelle démissionne

Lors de l'assemblée générale de l'Association des chirurgiens dentistes du Québec, tenue le 29 avril, les membres ont rejeté l'offre gouvernementale relative à un programme de soins dentaires pour les enfants âgés de moins de sept ans.

En janvier dernier le ministre des Affaires sociales avait annoncé qu'un accord était intervenu sur la couverture des actes inclus dans les secteurs du diagnostic, de la prévention et de la restauration.

Les négociations se sont poursuivies depuis sur le taux et les règles d'application du régime des divers actes compris dans le régime. Après des séances d'informations sur l'offre gouvernementale donnée par des représentants du Comité de négociation de l'ACDQ, les quelque 250 membres présents à l'assemblée générale ont rejeté l'offre gouvernementale par un vote majoritaire d'environ 90 pour cent. Il semble que les raisons du rejet soient:

1. La rémunération trop élevée accordée aux actes de prévention par rapport aux actes de restauration.

2. Certaines règles d'application jugées inacceptables.

3. La continuité mal définie de l'assurance pour les enfants ayant déjà reçu des services assurés et qui dans un avenir prochain dépasseront l'âge de sept ans.

4. Les corrections apportées à la chirurgie buccale déjà assurée et qui prévoient une diminution de taux pour les ablations de dents sous anesthésie générale.

5. Le retrait par le gouvernement du projet de loi sur la fluoruration des eaux de consommation.

Dans les heures qui ont suivi, le président Hubert LaBelle, qui était aussi membre du Comité de négociation, annonçait sa démission. Il désapprouvait la position prise par des membres du Comité de négociation ainsi que la décision des membres de l'ACDQ. Dans une lettre ultérieure adressée à tous les membres, le docteur LaBelle a donné les raisons pour lesquelles l'offre gouvernementale aurait, à son avis, dû être acceptée moyennant certaines corrections mineures.

Le ministre des Affaires sociales a vivement réagi en affirmant que les dentistes étaient plus intéressés à l'extraction qu'à la prévention.

La direction de l'ACDQ, sous la nouvelle présidence du docteur Pierre-Yves Lamarche, a laissé entendre qu'elle était prête à retourner à la table de négociation afin de recevoir une meilleure offre gouvernementale.

L'implantation des départements de santé communautaire se poursuit au Québec

L'implantation des départements de santé communautaire, étape impor-

VOTRE SÉCURITÉ

L'article suivant est le dixième d'une série sur les programmes d'assurance et de placements disponibles aux membres de la profession, par l'entremise du Service des régimes dentaires canadiens Inc (CDSPI).

Voici cinq conseils utiles pour se constituer un fonds de retraite:

1. Appliquez les règlements du gouvernement.

2. Fixez-vous un objectif réaliste que vous pourrez atteindre et prenez systématiquement les moyens de l'atteindre.

3. Ne soyez pas trop ambitieux; proposez-vous un revenu raisonnable.

4. Plus vous commencez tôt, plus grandes seront vos chances de succès.

5. En élaborant la planification de votre avenir, réglez votre visée pour le tir à longue distance.

1. Appliquez les règlements du gouvernement

Avec le temps, il devient de plus en plus apparent que le gouvernement favorise l'application de mesures pour nous forcer à investir dans des fonds de retraite, en rendant ce dernier plus attrayant, tout en rendant moins désirables les autres méthodes d'économiser. L'imposition additionnelle de taxes sur les dividendes des polices d'assurances, les taxes sur les gains en capital, la réduction réelle des niveaux élevés d'impôt sur le crédit de 20 pour cent des dividendes des corporations canadiennes, les changements affectant les indemnités de dépréciation sur les biens immobiliers etc, constituent des cas d'espèce. A titre d'exemple, supposons qu'une personne possède un revenu de placement de \$4,000; il lui faudrait verser \$2,000 d'impôt. Elle serait contrainte de gagner un revenu net de \$4,000 afin d'avoir le \$2,000 nécessaire pour payer l'impôt. Supposons que cette personne place le \$4,000 dans un fonds d'épargne-retraite, son revenu net en serait réduit

d'autant et son impôt serait équivalent à celui qu'elle verserait si elle n'avait jamais possédé de revenu de placement.

Aujourd'hui, il est possible d'investir le moindre de 20 pour cent de votre revenu ou \$4,000 dans l'épargne-retraite. Cet argent est immobilisé et non imposable jusqu'au moment de la retraite qui doit se produire, avant 71 ans, par le transfert de ces sommes imposables à un autre fonds sur lequel on prélèvera la somme désirée. A ce moment toutefois, cette dernière somme devient imposable. Etant donné que ces fonds sont immobilisés, le procédé favorise l'épargne et décourage les retraits hâtifs. De plus, les fonds sont insaisissables.

Il vous est possible d'administrer vous-même votre propre fonds d'épargne-retraite, mais les frais entraînés alors ne sont pas moindres et la plupart du temps supérieurs à ceux de l'administration d'un fonds d'épargne-retraite par une société de gestion. Les frais d'administration les moins élevés à votre disposition, vous sont offerts par le plan d'épargne-retraite de l'ADC à raison de 1/2 pour cent par année, ou plus exactement 1/24 pour cent par mois dont 40 pour cent est versé à la compagnie Trust Royal comme frais d'administration, 20 pour cent pour la publicité et la promotion et 40 pour cent versé au Service des régimes dentaires canadiens Inc (CDSPI). Ces dispositions peuvent englober l'ensemble de vos besoins de la période de retraite, mais il est peu probable que la majorité des dentistes voudront s'en prévaloir. Au décès, ces fonds s'incorporent à vos biens, mais peuvent se transférer sans frais d'impôt aux biens de l'épouse, à qui il est loisible de les encaisser sous forme de pension. A partir de ce moment, ils deviennent imposables.

2. Fixez-vous un objectif réaliste que vous pourrez atteindre et prenez systématiquement les moyens de l'atteindre

On demande souvent de quelle somme l'on doit disposer pour prendre sa retraite. Un conseiller d'une société de gestion a déclaré à l'un de nos collègues que déjà les biens qu'il possédait dépassaient ses besoins, qu'il devrait en vendre et prendre de longues vacances. Je suis convaincu qu'il s'agit d'un cas d'exception. Naturellement, le montant dont vous aurez besoin dépendra du train de vie que vous choisirez durant votre période de retraite. Il fut un temps où le tiers de votre revenu final avant la retraite était considéré comme

suffisant. Aujourd'hui, les experts suggèrent de viser à 75 pour cent de votre revenu final. Avec la poussée de l'inflation telle qu'elle se manifeste actuellement, il ne sera probablement jamais réaliste de placer toutes vos économies dans une rente viagère fixe. Il est maintenant possible de se procurer des rentes dont le montant s'ajuste au coût de la vie. Mais le meilleur moyen de bloquer l'inflation consiste à détenir des biens immobiliers ou des actions ordinaires. D'après les conseillers des sociétés de gestion, il n'est pas plus réaliste de se fixer un objectif si élevé qu'il vous permettrait de vivre de vos revenus. Il vous resterait alors un actif considérable à léguer à vos enfants, qui en hériteraient au moment où leurs besoins les plus pressants sont passés.

Le taux des rentes varie d'une semaine à l'autre et ceux qui se proposent de prendre leur retraite devraient pouvoir disposer d'un agent pour sonder le marché à leur place. Actuellement, il est possible d'obtenir au moins \$1,000 de revenu pour chaque \$10,000 investi à l'âge de 65 ans. Le montant pourra varier selon l'âge, les années garanties, et la compensation variable accordée selon le coût de la vie, etc.

Pour reprendre la question à savoir de quel montant il faut disposer pour réaliser ce plan, établissons qu'aujourd'hui, un homme marié, ayant des enfants, pourrait se fixer un montant de \$250,000. En se basant sur le taux d'inflation actuel, il est possible que ce chiffre ne réponde plus à la réalité dans 10 ou 20 ans. Pour cette raison, il importe de reviser périodiquement la situation, comme il est sage d'évaluer vos biens chaque année. Certaines valeurs comprennent des biens immobiliers: maison, maison de campagne etc. A l'heure de la retraite, si vous désirez conserver votre maison, etc, vos besoins seront plus considérables que si vous vendiez votre propriété pour vivre en appartement.

Dans ce cas, un objectif raisonnable comprendrait la conservation de votre maison, l'épargne-retraite, plus un montant suffisant d'assurances, alors que votre famille est encore jeune, pour combler la différence entre votre actif et les frais que réclame votre propriété. Il est évident que l'épargne systématique et la diminution de la dette par les versements hypothécaires augmentent votre actif, et permettent éventuellement de réduire vos besoins d'assurances.

Les points 3 et 4 feront l'objet du prochain article.

tante de l'application de la Loi sur les services de santé et des services sociaux, se poursuit à travers le Québec.

A la suite d'une rencontre récente avec des représentants du ministère des Affaires sociales, l'hôpital Sacré-Coeur de Hull qui était désigné par les règlements de la Loi 65 pour organiser un tel département pour l'ensemble de la région de l'Outaouais, a été invité à procéder graduellement à l'implantation de ce département au cours des prochains mois.

La création de ces départements signifie la prise en charge de la médecine préventive et de la protection de la santé publique par 31 centres hospitaliers désignés dans chacune des douze régions administratives du Québec.

La création des départements de santé communautaire au sein de ces centres hospitaliers constitue une idée originale au Québec. C'est un comité, présidé par le docteur Corbett MacDonald qui recommandait de rendre un certain nombre d'hôpitaux responsables du maintien et de l'amélioration de la santé de groupes de population pouvant varier de cent mille à trois cent mille habitants, en plus des responsabilités d'hospitalisation et de traitement qui leur sont confiées.

Les centres hospitaliers désignés pour organiser ces départements de santé communautaire auront notamment pour fonctions:

— d'assurer et de surveiller, dans leur territoire, la réalisation des programmes de soins préventifs essentiels destinés aux écoliers, aux mères

enceintes, aux nourrissons et à la population en général en matière de dépistage, d'immunisation, de contrôle des maladies infectieuses et d'éducation sanitaire;

— de pourvoir au développement et à l'organisation de soins à domicile adaptés aux besoins de la population et des malades au sortir de l'hospitalisation;

— de mener des études sur les tendances des maladies au sein de la population et de développer des méthodes d'intervention susceptibles de les combattre et de les prévenir;

— de veiller au bon fonctionnement des consultations externes et des services d'urgence de manière à y assurer en tout temps la présence de professionnels aptes à fournir les soins requis dans ces services.

Partout où ils seront constitués, les départements de santé communautaire assumeront les responsabilités qui étaient jusqu'ici partagées entre les unités sanitaires, les infirmières affectées au réseau des écoles secondaires et des CEGEPS et le Service de santé dentaire du ministère des Affaires sociales.

Prix et nominations

Le docteur Paynter dirigera le programme de subventions du Conseil de recherches

Le docteur K.J. Paynter, doyen du Collège de dentisterie de l'Université de la Saskatchewan a été nommé directeur du programme de subventions du Conseil de recherches médicales à Ottawa. Il entrera en fonctions le 1er juillet 1973.

Natif de Kingston, Ont., le docteur Paynter est diplômé (1944) de la Faculté de dentisterie de l'Université de Toronto. L'Université Columbia de New York lui décerna un doctorat en anatomie en 1944.

Après avoir fait partie du Corps dentaire canadien durant trois années,

il ouvrit un cabinet dentaire à Ottawa. En 1951, il passa au service de l'Université de Toronto où il occupa diverses fonctions jusqu'en 1967, alors qu'il fut appelé à la direction du nouveau Collège de dentisterie de l'Université de la Saskatchewan. La même année, il fut reçu Fellow du Collège international des dentistes.

Le docteur Paynter fut président du Conseil de recherches de l'Association dentaire canadienne ainsi que du Comité associé de recherches dentaires du Conseil national de recherches. Il occupa aussi la présidence de la Fondation canadienne de recherches dentaires et fut membre du Comité consultatif de recherches en hygiène publique du Conseil de santé du Dominion, Canada.

A Saskatoon, le docteur Paynter fut président du Comité consultatif sur les soins dentaires aux enfants de la Saskatchewan.

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Maxillo-mandibular surgery for correction of dentofacial deformities:

4. Maxillary retrusion (mandibular pseudoprognathism)

Simon Weinberg, DDS, FRCD(C)
Victor Moncarz, DDS
Toronto

This is the fourth in a series of articles on the current practice of maxillo-mandibular surgery. The articles are provided by courtesy of the Royal College of Dentists of Canada.

In a small percentage of dentofacial disharmonies the maxilla is retrodisplaced with respect to the mandible, producing a "dish face" profile with apparent mandibular prognathism (Fig 1A). These deformities are either developmental (Crouzon's syndrome) or acquired as a result of midfacial fractures.¹

The correction of developmental deformities requires a team approach. They are treated by creating a craniofacial separation (LeFort III procedure) and advancing the entire midface.² The post-traumatic retrusion is most easily corrected by means of a total maxillary osteotomy³ (Fig 2).

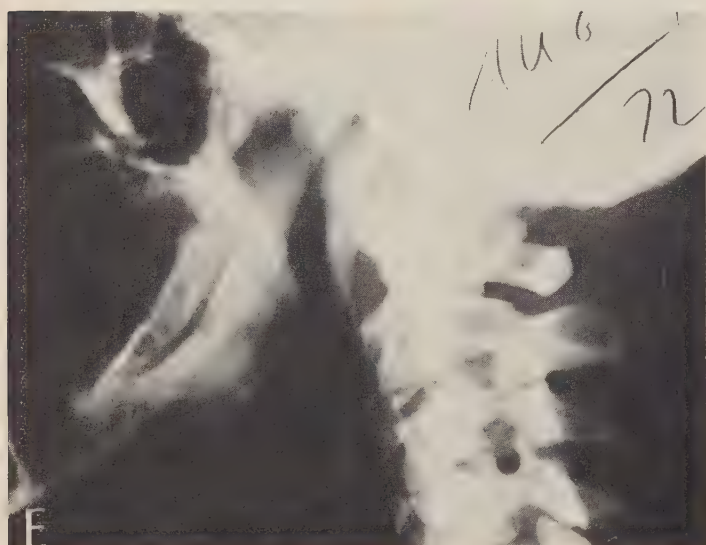
Only a cephalometric analysis of the skull can establish whether such deformity truly pertains to

the maxilla. If so, the chin to cranial base relationship (angle SNP) will be normal, while that of the maxilla to the cranial base will be abnormal (angle SNA) (Fig 1B, 3). The gonial angle and mandibular plane should be within normal limits.

Treatment is aimed at correcting the deformity. Though a subcondylar osteotomy for correction of the pseudoprognathism is much simpler, the results from this operation are at best a compromise.

Basically, two methods are available for total maxillary osteotomy (the LeFort I operation). Dingman and Harding⁴ and Antoni et al³ described a technique using a labial and buccal approach (Fig 2). Mohnac⁵ and Paul⁶ advocate a technique where palatal cuts are employed. We prefer to leave the palatal mucosa intact to ensure adequate tissue perfusion via the greater palatine and nasopalatine vessels.

After an incision in the mucobuccal fold, a horizontal osteotomy can be performed, extending from above the tuberosity areas, across the buttress of the zygoma, forward to the floor of the nose and the piriform fossa (Fig 1C). The medial walls of both maxillary sinuses must be cut. The maxilla is freed after detaching the nasal septum, vomer



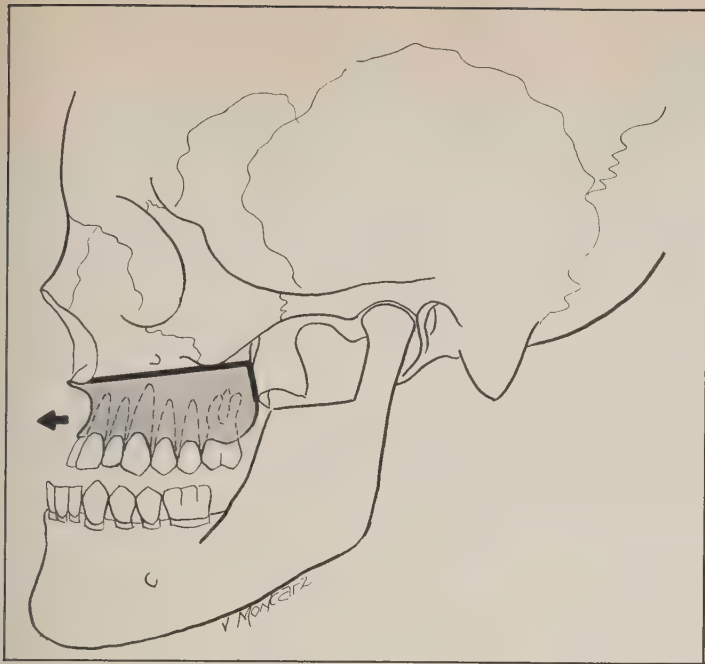


Fig 2 Maxillary osteotomy extends forward from the area of the tuberosity, below the buttress of the zygoma, to the piriform fossa. Posteriorly, the maxilla is freed at the pterygomaxillary junction.

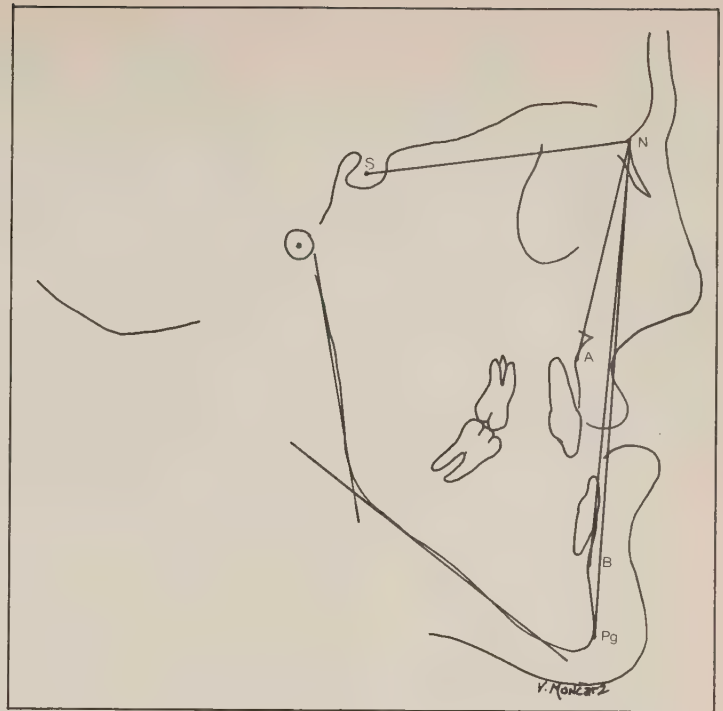


Fig 3 Cephalometric tracing depicting maxillary retrusion. Angle SNA is much smaller than normal, angles SNB, SNP are within normal limits.

and perpendicular plate of ethmoid from the nasal floor and detaching the pterygomaxillary junction.

The fragment is immobilized for six to eight weeks. Fixation can be achieved by means of direct transosseous wiring which may be supplemented with external skeletal fixation to a head frame. In the edentulous patient, prefabricated acrylic splints are used for immobilization (Fig 1D).

Some surgeons^{7,8} strongly advocate the placement of a bone graft between the maxilla and pterygoid plates to prevent regression and relapse. In our experience, however, this is not essential, and the possibility of relapse can be overcome by intermaxillary fixation for an adequate length of time. This very often entails the utilization of intermaxillary elastics worn overnight for a period of three to six months postoperatively.

Care must be taken in separating the pterygomaxillary junction because of its proximity to the pterygoid venous plexus. Haemorrhage resulting from severance of the greater palatine vessels could be of sufficient magnitude to require supplemental blood transfusion. Oral nasal and oral antral

fistular are other possible sequelae of maxillary osteotomy. In edentulous patients, relapse can occur unless immobilization is maintained for a sufficient period of time.

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Fig 1 Mandibular pseudopognathism due to maxillary retrusion. A, pre-operative "dish face" profile. B, pre-operative lateral skull radiograph showing marked maxillary retrusion and a relatively normal mandible. C, horizontal osteotomy extending from the horizontal tuberosity area to the piriform fossa. D, mobilized maxilla wired to a maxillary splint which, in turn, is wired to a mandibular splint. E, postoperative radiograph after the removal of all carious teeth and advancement of the maxilla. F, post-operative profile.

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Selection of patients amenable to simple orthodontic procedure using a Malocclusion Treatment Severity Index

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This relatively simple Malocclusion Treatment Severity Index can aid in identifying patients whose malocclusions can be corrected within a year by simple appliance therapy. The index is derived from the summation of measurements for overjet, molar displacement and apical base displacement.

L'application d'un simple test pour déterminer l'indice de gravité du traitement de la malocclusion permet d'identifier plus facilement les patients dont la malocclusion pourra être corrigée par une thérapie comportant l'application d'un appareil de redressement pour une période d'un an ou moins. L'indice de gravité est déduit de la somme des données se rapportant au surplomb, au déplacement des molaires et au déplacement de la base apicale.

It has always been difficult to select patients who can be treated successfully to completion by simple orthodontic procedures in a predetermined period of time. This problem is encountered by the general practitioner undertaking selective orthodontic therapy and by the undergraduate dental student who is limited to 12 months of clinical orthodontic practice.

Unfortunately, in creating the disorders commonly labelled as malocclusion, nature did not provide for the needs of either practitioner or student. Many cases require long, complex therapy and it is difficult to differentiate them from those that respond relatively quickly to simple orthodontic mechanotherapy.¹⁻³

At the University of Toronto prior to 1971, orthodontic clinicians selected teaching cases on the basis of subjective examination techniques. The suitability of each case was further investigated by objective orthodontic diagnostic procedures which included a detailed history, model analysis cephalometric analysis, functional analysis and an appraisal of physical status.

The types of malocclusions sought to teach interceptive and limited corrective treatment were those that met the following criteria:

- malocclusion of dento-alveolar origin with the apical bases of the maxilla and mandible related normally anteroposteriorly and buccolingually;
- adequate space in each dental arch to accommodate the permanent teeth in normal alignment;
- evidence of a good or potentially good mandibular dental arch;
- tipping movements of the teeth and/or orthopaedic effects of mandibular growth should establish satisfactory aesthetics, stability, health and proper function of the dentition after treatment;
- not more than two major rotations within each dental arch;
- treatment should not exceed one year.

Classification of orthodontic cases whose treatment was complete or incomplete within 12 months according to selected levels of the Malocclusion Treatment Severity Index (MTSI)

Table 1

	No. of cases		
	MTSI <-5	MTSI -5 to +15	MTSI >+15
Treatment completed	4 (23%)	210 (72%)	5 (10%)
Treatment not completed	13 (77%)	81 (28%)	45 (90%)
Combined	17	291	50

Though this technique provided sufficient patients for the students, 36 per cent of the cases could not be completed in the one year period and had to be transferred to another student for further treatment. We therefore looked for a better and more accurate method of selecting cases that could be treated by simple therapy within 12 months.

Method

The 358 cases assigned to three third year classes (1969-70, 1970-71, 1971-72) were examined for various dental and skeletal symptoms associated with malocclusion. The original models and profile cephalometric radiographs were assessed for overjet, overbite, molar and canine displacement, curve of Spee, spacing/crowding, angle SNA, angle SNB, angle ANB, angle of convexity, FMA angle and apical base difference. The first six measurements were taken from dental casts, the remaining seven from a profile cephalometric radiograph of the patient.

Scatter diagrams were constructed for each factor. None of the factors taken singly showed a significant difference between patients whose treatment was completed in one year and those incomplete after a year's treatment. However, significant differences occurred in the two groups when three measurements (overjet, apical base displacement and molar displacement) were combined into a Malocclusion Treatment Severity Index (MTSI). In those groups with a numerical value above +15 or below -5 there was a substantial decrease in the number of cases completing treatment in one year (Table 1). Approximately 90 per cent of cases above an index of +15 and 77 per cent of cases below -5 required treatment beyond the time

available to the original student. Of those with an index between these two limits, 72 per cent successfully completed treatment in one year or less (Fig 1).

It seemed apparent that calculation of the Malocclusion Treatment Severity Index prior to treatment could eliminate some of the more complex malocclusions which do not respond well to simple treatment procedures within a one year period. This information led to the development of a convenient check-off form for selecting orthodontic cases suitable for short term treatment (Fig 2).

Calculation of the Malocclusion Treatment Severity Index

Overjet — Overjet is measured in the horizontal plane of space from the labial aspect of the most prominent maxillary incisor to the labial aspect of the corresponding mandibular incisor. A Boley gauge is used for this purpose. When the maxillary incisor teeth are ahead of the mandibular incisors (as in a Class II malocclusion) the measurement is recorded as positive. When the mandibular incisor teeth are ahead of maxillary incisors (as in a Class

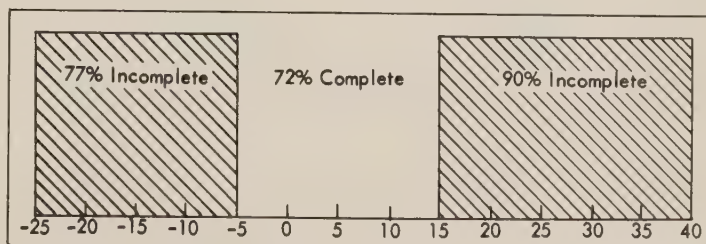


Fig 1 Percentage of cases with complete and incomplete treatment according to the Malocclusion Treatment Severity Index.

ORTHODONTIC CASE SELECTION		
GOOD MANDIBULAR DENTAL ARCH ?		yes no
Space.....mm.		
Axial inclinations		
Centre line		
Rotations		
Anchorage		
ADAPTATION of MAXILLARY ARCH		INDEX ?
Tipping tooth movements		Overjet mm.
Mandibular growth		Molar relationship mm.
Orthopaedics		A B relationship mm.
		Total.....mm.

Fig 2 Check off form used for selecting orthodontic cases amenable to short-term treatment with simple appliance therapy.

III malocclusion) the measurement is recorded as negative (Fig 3A). This method was previously described by Grainger and Summers.^{4 5}

Molar relationship — When there is an ideal Class I relationship (mesiobuccal cusp of the maxillary first permanent molar in the mesiobuccal groove of the mandibular first permanent molar) the displacement is nil and is assigned a value of zero. If the molar relationship deviates toward Class II or Class III the displacement is measured in millimetres with a Boley gauge. The amount of displacement of the cusp groove relationship is assigned a positive value if it tends to Class II or a negative value if it tends to Class III (Fig. 3B). This method was previously described by Hunter.⁶

Apical base relationship — The relationship of the apical bases is measured relative to the functional occlusal plane. This plane is represented by a line that bisects the cuspal interdigitations of the first permanent molars, first and second bicuspid. The incisors and cuspids are not considered because they are subjected to environmental forces which may cause considerable variation. Neither are second molars used as they may erupt tipped.⁷ A perpendicular is erected from the maxillary apical base, represented by "A" point, to the functional occlusal plane. A second perpendicular is erected from the mandibular apical base, represented by "B" point, to the functional occlusal plane (Fig 3C). The distance parallel to the functional occlusal plane between the perpendicular lines is recorded in millimeters: (1) as a positive value when the maxillary apical base is ahead of mandibular apical base, and (2) as a negative value when the mandibular apical base is ahead of the maxillary apical base. This method was previously

described by Harvold and Hatton.⁸ The Malocclusion Treatment Severity Index is derived from the formula: MTSI = overjet (mm) + molar displacement (mm) + apical base displacement (mm).

Discussion

When the values for overjet, molar displacement and apical base displacement are negative, there is a strong disposition toward a Class III dental and skeletal malocclusion. Various combinations of positive and negative measurements produce an index which falls between -5 and +15.

In unilateral Class II or Class III cases or in cases where one pair of incisors exhibits more overjet than the adjacent pair, the overjet and molar displacement should be measured for the teeth evidencing the greatest amount of displacement.

According to the data in Table 1 the selection of cases with an MTSI between -5 and +15 in combination with the factors initially described result in 72 per cent of these cases completing treatment in one year or less. Further, the rejection of cases for treatment with an MTSI above +15 or below -5 would reduce by 87 per cent the number of cases, in these categories, whose treatment is incomplete at the end of 12 months. The use of the index is only applicable to non-extraction cases treated with simple appliances such as labiolingual, monobloc, headgear and removable appliances.

Why the index sorts out extremes is not easily explained. The very nature of the index — a combination of measurements assessing dental and skeletal symptoms of malocclusion — does not adequately assess the aetiology of those symptoms. The objective measurement of symptoms does not

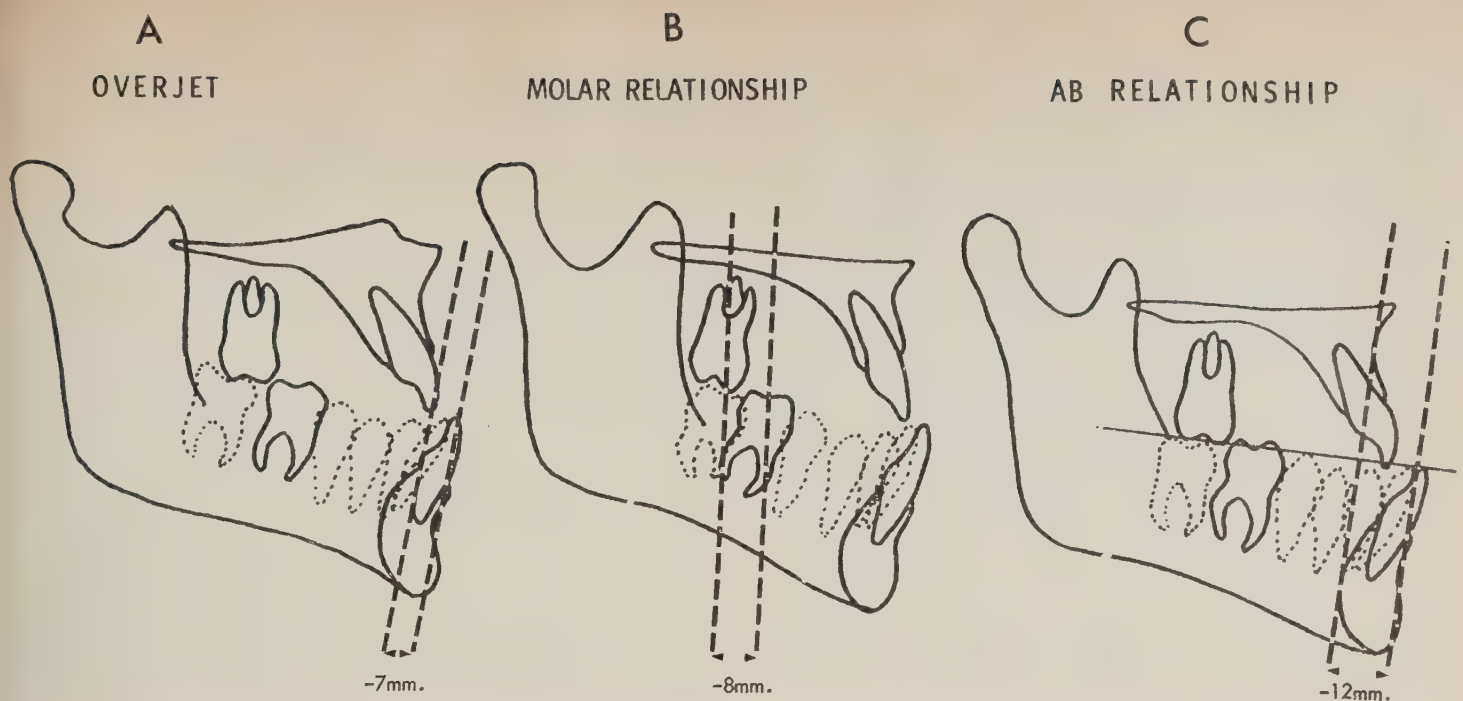


Fig 3 Measurements used to derive the Malocclusion Treatment Severity Index for a hypothetical Class III malocclusion.

foretell the time of most rapid skeletal growth which might reduce treatment time in certain cases.

Unfortunately the Malocclusion Treatment Severity Index cannot eliminate all long-term cases because it does not embrace such factors as inadequate treatment objectives, improper treatment timing, inefficient appliance design, appliance breakage and co-operation on the part of the patient.

The index highlights the fact that when buccal and anterior segments of the dental arch are displaced and when there is associated apical base disharmony, it is highly probable that the case will be more difficult to treat in 12 months by simple mechanotherapy. The Malocclusion Treatment Severity Index, when combined with the principles of clinical case selection enumerated earlier in this article, should nevertheless assist general practitioners and students in selecting more orthodontic cases amenable to simple interceptive and limited corrective procedures.

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Scanning electron microscopy: Observations on occlusal human dental plaque

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Examination of human occlusal plaque by scanning electron microscopy revealed two distinct zones of bacterial aggregation. Areas where bacterial accumulation was light were dominated by coccoid organisms; those with heavy accumulation were characterized by dense mats of filamentous and rod shaped organisms. Sites of heavy plaque were usually located in protected areas, principally at the occlusal orifice of fissures which are often the site of initiation and spread of occlusal caries.

L'examen au microscope électronique de la plaque occlusale chez l'homme révèle deux zones distinctes d'aggrégation bactérienne. Les zones où la prolifération bactérienne est légère révèlent la présence dominante de cocci, alors que les zones à prolifération dense se caractérisent par la présence massive d'organismes filamenteux sous forme de bâtonnets. C'est aux endroits inaccessibles que la plaque est généralement plus dense particulièrement à l'orifice occlusal des fissures, qui sont fréquemment le site d'origine et de développement de caries occlusales.

Dental plaque has been defined as the adherent deposit forming on a tooth surface when oral hygiene measures lack thoroughness, are temporarily discontinued or completely abandoned. In 1897 Williams¹ demonstrated plaque by histologic preparation and Black² wrote extensively on the association between plaque and caries. Much contention existed at the time, since Miller³ believed plaque to play a protective role despite his theory that bacteria and certain food substrates were responsible for caries. Since that time a vast effort has been directed toward research into plaque and dental caries. In the 1930s Bibby^{4, 5} contributed extensively to understanding the role of both plaque and pellicle in caries initiation and progress. Jenkins⁶ has described plaque as a protein matrix in which micro-organisms are suspended. Egelberg⁷ reviewed the development of plaque, indicating that plaque undergoes continuous change. Early growth is dominated by coccal forms and later filaments, spirochaetes and fusobacteria appear. Early plaque formation involves preferential multiplication of aerobic organisms.

Most studies on the structure of plaque have dealt with that found on smooth tooth surfaces.⁸⁻¹³ Plaque on occlusal surfaces, particularly in pits and fissures, has received scant



Fig 1 Scanning electron photomicrograph showing heavy (H) and light (L) areas of plaque on the crown of a tooth. x 20.



Fig 2 Scanning electron photomicrograph of micro-organisms, principally cocci, in the areas of light plaque deposits. x 5,000.

attention^{14,15} because specimen preparation imposes problems which are quite apparent in transmission electron microscopy. Light microscopy is simpler but the information gained is more limited. However, the advent of scanning electron microscopy has opened new avenues, bringing new findings and confirming earlier observations derived from other techniques. This paper presents our preliminary observations on occlusal human plaque and relates these to previous observations made by other methods. It also illustrates how scanning electron microscopy can aid in the examination of plaque.

Materials and methods

Five hundred and thirty-four molar and bicuspid teeth from approximately 200 patients of different ages were fixed in 10 per cent neutral formalin immediately following extraction. Taking care to keep the teeth moist, the roots were removed and four shallow cuts were made in line with the fissures on the mesial, distal, buccal and lingual surfaces.¹⁶ Such cuts permitted cleaving the teeth to expose the pits and fissures in depth for examination of their contents, after inspecting the occlusal surfaces.

The specimens were prepared for examination by scanning electron microscopy using a modified camphene sublimation technique described by Galil and Gwinnett.¹⁷ Briefly, the method involves dehydration, delipidization and imbibition of camphene by the specimen. The camphene, which sublimates at room temperature, provides a simple

approach to handling large tissue samples. The technique was first developed by Watters and Buck.¹⁸ The whole occlusal surface of the teeth was then shadowed with gold-palladium and examined in a Cambridge Instruments scanning electron microscope. Subsequently the teeth were cleaved, reshadowed and the fissures and pits examined. The teeth were also examined by stereo light microscopy following the application of disclosing solution.

Results

Two distinct areas of occlusal plaque were identified by disclosing solution and direct light microscopy and subsequent scanning electron microscopy (Fig 1). Such areas were termed heavy and light and were equated with the amount of material covering a particular area of the occlusal surface. Light areas were dominated by coccoid organisms (Fig 2) whereas heavy areas showed principally filamentous or rod-shaped organisms (Fig 3). Groups of cocci were commonly observed in shallow depressions in the enamel of the inclined cuspal planes.

The heavy filamentous groupings were always located in the region of the orifice to the pits and fissures, though some isolated areas appeared on the inclined cuspal planes. Some parts of the enamel on the cuspal planes were devoid of organisms (Fig 4).

The filaments appeared to be woven together producing a bacterial mat. Within the mat were other organisms and spaces which may have been



Fig 3 Scanning electron photomicrograph of micro-organisms constituting heavy plaque. A mat of woven filaments and rod shaped organisms is evident. x 2,000.

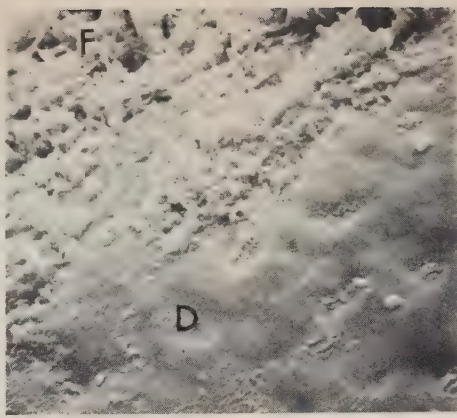


Fig 4 Scanning electron photomicrograph showing a transition from areas devoid of organisms to those in association with small depressions in the enamel (d) and to the fissural opening (F). x 2,000.

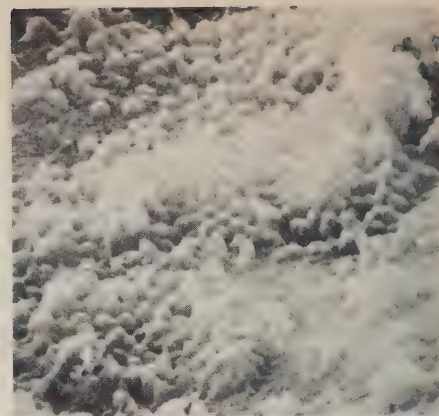


Fig 5 Scanning electron photomicrograph showing the preponderance of coccoid organisms in the deeper regions of the pits and fissures. x 5,000.

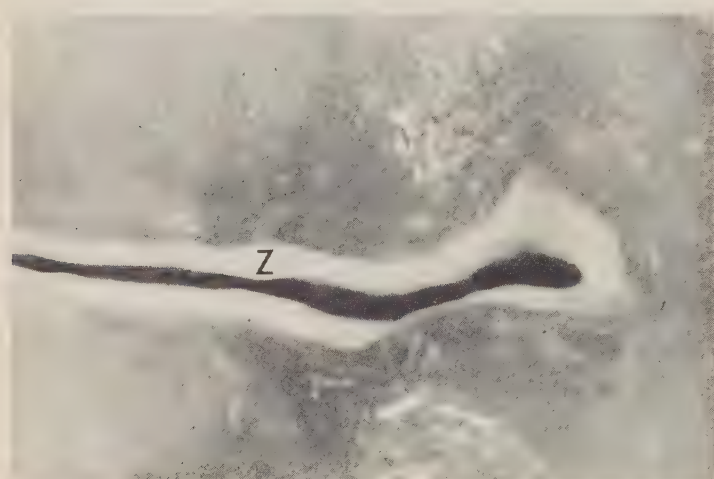


Fig 6 Macrophotograph of fissure showing a white zone (Z) in the region of the orifice. This manifestation of the early carious lesion was closely related to deposits of heavy plaque. x 5.



Fig 7 Polarized light photomicrograph of longitudinal ground section through a white zone similar to that in Fig 6. The characteristic zonation of the carious lesion is evident. x 25.

occupied by intercellular material lost in specimen preparation such as lipids. From the inclined cuspal planes toward the occlusal opening to the pits and fissures a transition in organism type occurred. The cuspal enamel was dominated by coccoid organisms which gradually gave way to a dominant filamentous and rod-shaped group in the region of the fissure orifice. Below this orifice and into the deeper regions of the pits and fissures the coccoid variety appeared dominant (Fig 5).

Discussion

The presence of light and heavy areas of plaque probably indicates sites of preference for plaque development. The anatomical configuration of the teeth, their position in the arch, occlusion and hygiene are certainly factors influencing plaque development. Sites of heavy plaque were usually located in relatively protected areas. Such areas are known to be isolated from cleansing action, whether

intrinsic, toothbrushing or other prophylactic measures.^{19,20}

Some of the observations made in this study corroborate those reported by others.⁸⁻¹⁰ The observation of a transition in organism type in occlusal plaque appears significant. Huxley¹⁵ has reported that gram positive cocci and short gram positive rods were the dominant organisms in occlusal plaque in rodents. He confirms the doubts of others concerning the extrapolation of information from rodents to humans with respect to caries. Our observations on human occlusal plaque show some dissimilarities with Huxley's findings. Of particular significance is the zone of heavy plaque. Despite the sampling from a wide age range of patients, the heavy plaque was consistently dominated by filamentous and short rod organisms. Huxley observed few filaments. Furthermore, studies in our laboratory have confirmed the observations made by Mortimer²¹ that the site of the early carious lesion associated with pits and fissures is on the lateral walls of shallow

wide fissures and in deep fissures occlusal to the fissural constriction. Only in the later stages of the attack does the enamel at the base of pits and fissures become involved. The early lesion is manifest as a white zone visible to the unaided eye if the occlusal surface is clean and well dried. It is located in the enamel at the orifice to the fissure, extending down into the fissure. That such observed zones (Fig 6) are not deposits on enamel, such as calculus, can be seen in longitudinal ground sections through such zones. Figure 7 illustrates the typical appearance of the early enamel lesion and shows its relation to the walls of the fissure and to the region of the orifice up to and including some of the enamel on the inclined cuspal plane. The characteristic zonation of the lesion is apparent.^{21,22} Such white zones were present beneath areas of heavy plaque in which filamentous organisms were dominant. Whether such organisms initiate or act in an adjunctive capacity to caries progression remains debatable. None the less, transition was observed in the dominance of a particular organism in sites adjacent to which enamel was being attacked. The positive identity of such organisms is important and worthy of further attention in our understanding of pit and fissure caries.

Summary

Oral micro-organisms are deposited on the occlusal surfaces of teeth in a specific pattern and different factors formulate the final outline of the plaque. Scanning electron microscopy is an acceptable method for displaying occlusal human dental plaque which consists mainly of coccoid and filamentous organisms deposited and distributed in zones of light and heavy aggregation respectively. The heavy areas are almost exclusively confined to the occlusal orifice of the fissures but do not extend into the deeper regions of the fissures. Such deeper sites are dominated by coccoid forms.

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Use of sedation-analgesia in general dentistry

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Recently there has been renewed interest in the use of nitrous oxide-oxygen as a sedative or analgesic agent. The Canadian Society of Oral Surgeons has therefore adopted the following statement on the use of this and other sedative-analgesic agents in general dentistry.

Definitions — There are three basic cognitive states: full consciousness, altered consciousness and unconsciousness.

In the fully conscious state, pain control is achieved by local anaesthesia.

In the altered conscious state, pain control requires local anaesthesia, but fear and apprehension are reduced and the pain reaction threshold raised by the use of sedative-analgesic agents. Terms used to describe the altered conscious state include sedation, relative analgesia, hypoalgesia, sedalgesia, analgesia and neuroleptanalgesia.

In the unconscious state (general anaesthesia), pain reaction is controlled completely.

Some practitioners expect too much from sedative-analgesic agents in regard to elevation of the pain threshold. According to Monheim,¹ "it should be clearly understood that the pain threshold can be raised to limited degrees only, dependent upon the specific drugs used. It is physiologically impossible to eliminate all pain of the most severe nature by

raising the pain threshold alone. To clarify the preceding statement further, the presence of more noxious stimuli creating severe pain will necessitate blocking the pathway of the impulse by local anaesthesia or completely depressing pain reaction centrally by the use of a general anaesthetic."

Aim and purpose — The aim and purpose of sedation-analgesia is to reduce fear and apprehension and, to a lesser extent, to raise the pain threshold. Langa² and Jorgensen³ both stress this point and add that the actual control of pain must be accomplished by local anaesthesia.

The agent and method used must have sufficient versatility of administration to maintain the sedative state easily without rapid fluctuations to full consciousness or the anaesthetic state.

Agents — Sedatives may be administered orally, intramuscularly, intravenously or by inhalation.

Commonly used agents include:

Oral — pentobarbital (Nembutal);

Intramuscular — meperidine combined with scopolamine;

Intravenous — pentobarbital, pentobarbital followed by meperidine, promethazine HCl (Phener-

gan), diazepam (Valium), fentanyl droperidol (Innovar);

Inhalation — nitrous oxide-oxygen.

In addition, there are many combinations of drugs which alter the state of consciousness.

Limitations and complications — Most complications arise from a lack of knowledge, inadequate planning and a lack of appreciation of the limitations of the agent or method. The main limitation in regard to sedation is that it is not intended to relieve pain. Increasing the dose of a sedative agent in order to achieve relief from pain may lead to cerebral depression and eventual anaesthesia with accompanying loss of protective reflexes for the pulmonary tree, loss of consciousness and possible severe depression. All routes of administration have potential dangers and the practitioner must be prepared to deal with problems ranging from severe depression, inadvertent toxic overdose, to idiosyncrasy and allergic reaction which may arise from the use of sedative-analgesic agents. Since many ambulatory patients take regular medication, the practitioner must also be aware of their interaction with other drugs.

As stated by Pleasants,⁴ the main objection to relative analgesia is not so much to the agent or the method but to the lack of training and knowledge of dental practitioners using inhalation sedation.

Educational standards — The American Dental Association's Council on Dental Education⁵ recommends "that dentists who have had no previous undergraduate training in intravenous or inhalation sedation should receive similar courses given to predoctoral dental students. For example, an introductory program of nitrous oxide or intravenous sedation should provide appropriate didactic lectures, clinical demonstrations and extensive practical experience on a variety of dental patients under qualified supervision. The supervisor of each continuing education program should be expected to assess the proficiency of every student completing the course."

Short, two day orientation courses are not adequate to produce a practitioner competent in all aspects of sedation-analgesia.

Conclusions

1. Alteration of the conscious state, whether by oral, intramuscular, intravenous or inhalation sedation analgesia, has a place in dental practice for the control of fear and apprehension provided the dental practitioner is competent in all aspects of its use.

2. Minimum training, both didactic and practical, should parallel that of the undergraduate student. The instruction should include a knowledge of the agents and methods of administration, the ability to recognize complications and capability in resuscitative measures. A trained staff with proper facilities and adequate resuscitative armamentarium is essential.

3. Undergraduate students should receive didactic and clinical experience in all aspects of the management of apprehension and pain control.

The foregoing statement was adopted by the Canadian Society of Oral Surgeons at its annual meeting June 29 — July 2, 1972.

Dr. Van Alstine's address is: 15 Victoria Medical Dental Bldg, 1120 Yates St., Victoria, BC.

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Book Reviews

Pathology of Tumours of the Oral Tissues

R. B. Lucas. Ed 2. Edinburgh and London, Churchill Livingstone, 1972. (Available from Longmans Canada Limited, Don Mills, Ont) 386 p. Illus. \$25.25

Dr. Lucas is dean and professor of oral pathology at the Royal Dental Hospital of London and first presented this book in 1964. It received immediate acclaim because of his breadth of knowledge of the field and the clarity and succinctness of his presentation.

In the present second edition he has reviewed every chapter and incorporated new knowledge wherever it is pertinent. The supporting bibliography is both adequate and up-to-date, although it draws largely from the English language literature. The numerous illustrations include gross, radiographic and microscopic appearances of lesions and they are all of a very high quality.

In his preface the author states that he had the pathologist in mind when offering his book, but the reviewer believes that its value extends to many clinical fields and that the general clinician will find much to correlate the gross aspects of a lesion with the laboratory findings.

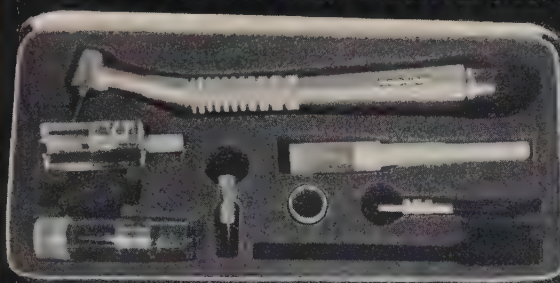
The text has intentionally been limited to the field of oral tumour pathology and in this edition has been expanded some 70 pages over its predecessor for which the author apologizes. The reviewer feels that no apology is necessary, having enjoyed every page of it. The text is interesting, concise and authoritative and is recommended to anyone reading in the field of oral neoplasia.

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BRITISH COLUMBIA — Kelowna. 620 square feet of office space for rent in Medical Dental Bldg. in the sunny Okanagan. Reply to Dr. W. J. Strilchuk, at 1737 Pandosy Street, Kelowna, B.C. or phone 762-2521.

MANITOBA — The Pas. Sale or Associate. Busy practice of two dentists located in a prosperous and growing community. Good income (Manitoba fee schedule). Owner wishes to return to graduate studies. Reply to CDA Box No. 1290.

ONTARIO — Ottawa. Dental office space for rent. Located in apartment building. Excellent location. Reasonable rent. 900 square feet — two operatories rooms. Lessee relocating in fall 1973 to join group practice. Please reply CDA Box No. 1224.

ONTARIO — South River. Drawing area 5000 plus, only dentist, preventive practice, 4 years old. Two rooms fully equipped for four-handed sit-down dentistry, private office, large business office, patient education room, homecare cubicles, panorex central lab and sterilizing area, dark room. Owner returning to graduate school. Apply Dr. D. Chamberlain, Box 100, South River or call 705-386-2965.

ONTARIO — Deep River. FOR SALE:- Dental Practice — Owner retiring after twenty-five years in present location. 2 operatories fully equipped (I.S.S. White & I Ritter); X-ray, 1 equipped Lab; Cavetron unused. Situated in the middle of the Upper Ottawa Valley (Town of Deep River). Hospital appointment available. Specially-zoned commercial property available for clinic, offices, apartments or residence. Alternately four-bedroom house available with adjoining property suitable for construction of clinic if desired. Contact Dr. E. G. Sinclair, Office No. 613-584-2151; Residence No. 613-584-3784.

ONTARIO — West End Toronto. Fully equipped and furnished dental office for rent in a modern medical clinic building; consisting of four operatories, nurse/receptionist station, private office and large waiting room. Central unit for gas analgesia fitted. Building fully air conditioned, janitorial services provided, ample parking. Reply CDA Box No. 1227.

SASKATCHEWAN — Nipawin. Busy general practice for sale in attractive N. E. Sask. town of 4,500 serving large trading area. Practice situated in modern air conditioned building with 3 Ritter equipped operatories, X-ray room, Lab, private office, reception room and spare room. Building lease by negotiation. Contact R. Mcl. Clark, Box 2013, Nipawin, Sask.

ONTARIO — Lancaster. Available: office space in new air-conditioned Medical centre situated on the St. Lawrence River, in prosperous rural community, 15 miles from Cornwall, 70 miles from Montreal. Older experienced dentist preferred. Country homes, excellent schools, churches, curling, riding, golf — 5 mile radius. Contact Lan-Char Medical Centre, Lancaster, Ontario. KC0 1N0.

ASSOCIATESHIPS WANTED

ORAL SURGEON — Canadian born oral surgeon who has recently graduated, is Board eligible and certified, seeks associateship with a view to partnership in a major Canadian City, Address CDA Box No. 1216.

RECENT GRADUATE — seeks associateship, preferably in a group practice, anywhere in Canada. Desires good learning experience. Available in the fall, 1973. Please reply CDA Box No. 1295.

BRITISH COLUMBIA — Full time associateship desired in Vancouver-Victoria area. 1974 University of Toronto graduate, age 27, married, desires associateship with possible view to partnership in growing modern group practice. Available June 1974. Will be in Vancouver during CDA Convention in October. Please reply CDA Box No. 1289.

ASSOCIATESHIPS AVAILABLE

ALBERTA — Westlock. Associate wanted in well-established modern general practice. Just 45 miles from Edmonton. No initial outlay necessary. Commission basis temporarily. Excellent opportunity, be busy immediately. Growing town with all recreational facilities. Contact Dr. B. C. Longley, Box 265, Westlock, Alberta.



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Salary \$17,656 to \$23,516
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ZONE DENTAL OFFICER

One position at Prince Rupert, B.C., one position at Prince George, B.C., and various positions in Northwest Territories and the Yukon.

DUTIES: Under the direction of the Zone Director and in consultation with the Regional Dental Officer, will organize and implement a comprehensive dental care program and a dental Health Education program for Indian people in remote or isolated areas in accordance with approved Departmental policy. Will travel by air, land or water, transporting portable dental equipment in order to establish and operate field dental clinics on Indian reserves. Performs administrative duties, and liaises with Indian community leaders and health workers, private dentists, and Provincial Government Personnel.

FIELD DENTAL OFFICER

One position at Prince Rupert, B.C. and various positions in the Northwest Territories and the Yukon.

DUTIES: Under the direction of the Zone Dental Officer, provides basic dental care including restorations, extractions, prophylaxis and topical fluoride applications, for Indian people in remote or isolated areas of North West British Columbia or the Northwest Territories and the Yukon. Using portable equipment sets up and operates field dental clinics and conducts a dental health education program. Maintains records and submits reports.

QUALIFICATIONS: Graduation from a recognized school of dentistry and a licence to practice in a province of Canada; thorough knowledge of the theory and practice of dentistry; ability to work with children; personal suitability and satisfactory physical condition; availability to travel when field work is required. For the Zone Dental Officer positions, general knowledge of the dental health conditions of the population being served and of available dental and related services from private dentists. Knowledge of administrative practices and procedures sufficient to perform the duties. Knowledge of the English language is essential for these positions.

For positions in British Columbia, apply immediately to:

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PERSONNEL ADMINISTRATOR
DEPARTMENT OF NATIONAL HEALTH
AND WELFARE
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OF CANADA
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Please quote competition number 73-E-3 on all correspondence.

ALBERTA — Fort McMurray — An immediate opening available for an associate to join four-chair, fully equipped general practice. High annual gross and excellent percentage will be arranged with view to partnership. Population 8,500. Beautiful country, 285 miles North of Edmonton. One hour flight PWA from Edmonton. Apply Dr. D. E. Florence, Box 127, Fort McMurray or telephone 743-2961 or business 743-8107.

BRITISH COLUMBIA — Vancouver. Full time associate to replace one dentist in two dentist, four chair office. General practice, with high gross and good fees. City centre location. Excellent opportunity for right person. A good personality is a requisite in this happy office. Reply CDA Box No. 1294.

BRITISH COLUMBIA — Excellent opportunity for recent graduate to associate, with view to take over in 5 years more or less. No down payment, excellent working conditions, Vancouver Island weather, population growth 10% a year. Apply G. C. Walkey, 160 Jubilee St., Duncan, B.C.

ONTARIO — Associate wanted. Excellent opportunity for a rural and small town practice. Approximately 45 miles north of Kitchener-Waterloo. Ninety minutes from Toronto. Reply CDA Box No. 1276.

ONTARIO — Associate with view to partnership wanted for busy Metropolitan Toronto Oral Surgery practice. Please reply CDA Box No. 1273.

ONTARIO — London. FULL TIME ASSOCIATE for busy two dentist — 4 chair dental clinic in West London to start May or June 1973. High gross — fully diversified practice. If personality and views are in accord, the associateship could develop into a future combined expansion programme. Reply CDA Box No. 1249.

ONTARIO — Associate wanted for general practice. Opportunity available immediately, private use of 2 fully equipped operatories. Do your own thing. Reply CDA Box No. 1252.

ONTARIO — Windsor. Orthodontic associate required — long established practice in Windsor, Ont. Please reply CDA Box No. 1293.

ONTARIO — Associate required for modern clinic in Niagara Falls, Ont, slated to be ready in July, 1973. For more information call: Dr. Bernard Blackstien, 416-354-5821 or 416-358-8274 evenings.

SASKATCHEWAN — Rosetown. An immediate opening is available for an associate to join a busy general practice. High annual gross and excellent percentage will be arranged. Fully modern office with six operatories, modern equipment and air-conditioned. Contact Dr. Stan Dovich, Box 1240, Rosetown, Sask. Phone 882-2123.

SASKATCHEWAN — Associate desired for high gross preventive oriented practice in Saskatoon. One of three Associates leaving for post-graduate study. For further information — phone — 306-652-2341 — or write Dr. S. R. Gelmon, 519 Medical Arts Building, Saskatoon, Saskatchewan.

OPPORTUNITIES AVAILABLE

ALBERTA — Edmonton. Immediate opening for dentist to work Fridays and Saturdays in ultra modern spacious dental office. Percentage agreement. Please reply CDA Box No. 1291.

BRITISH COLUMBIA — Dentist required for summer replacement from July 15 to August 30, Coquitlam office. Telephone 939-5333 or write CDA Box No. 1292.

ONTARIO — The NDEB of Canada solicits applications for a half time Registrar. Applicants must possess a degree in Dentistry, some experience in administration. Residence in Ottawa. Apply the Registrar, Dr. D. Proctor, 780 Bannatyne Ave., Winnipeg, Manitoba R3E 0W2.

ONTARIO — Dental Hygienist required to assist in conducting and developing a new Preventive Dental Public Health Program in Kent-Chatham Health Unit area. Salary range \$7343 to \$8975 (To the end of 1973. Will be revised upwards in January 1974.), plus fringe benefits. Commencement date July 1, 1973. For further information please contact: Director, Public Health Dentistry, Kent-Chatham Health Unit, County Building, 435 Grand Avenue, West, Chatham, Ontario.

ONTARIO — Family dentist urgently required, serving population of 5000. 27 miles east of Kingston, Thousand Islands district. Modern medical centre available June 15. Area declared underserved by Department of Health. Incentive grant available. Farming, industrial, tourist area with excellent educational and recreational facilities. Write: St. Lawrence District Medical Centre, Box 102, Lansdowne, Ont.

ONTARIO — Dental Hygienist required for 1973-1974 school year, Borough of Scarborough — Health Department. Commencing September 4, 1974 to work in school programme of education and inspection during school days only. Starting salary up to \$7885 depending on qualifications and experience. Comprehensive range of fringe benefits available. Apply in writing only to the: Personnel Commissioner, Borough of Scarborough, 2001 Eglinton Avenue East, Scarborough, Ontario.

MANITOBA — Winnipeg. Oral surgeon certified to practise in Manitoba required for busy Winnipeg practise. Object partnership. Please submit qualifications and address to CDA Box No. 1165.

QUEBEC — Montreal. Dental Hygienist required for group practise in Montreal. Reply CDA Box No. 1265.

QUEBEC — McGill University, Faculty of Dentistry requires a full time physiologist with a dental background for the purpose of undergraduate and graduate teaching and research. Position open September 1973. Please reply to Dean E. R. Ambrose, Faculty of Dentistry, McGill University, P.O. Box 6070, Montreal 101, Quebec. All replies confidential.

QUEBEC — Montreal. Unusual opportunity for a new graduate or dental hygienist wishing to relocate. Established preventive orientated Montreal dental practice. Modern sit down equipment and cavitron. New provincial legislation provides for practice of expanded duty functions. Come and see us. When you accept this position your airfare will be reimbursed. Please apply in writing submitting curriculum vitae to: Dr. L. E. Kent, 4695 Sherbrooke St. West, Montreal, P.Q.

QUEBEC — S.O.S. DENTISTES, Maniwaki. Un appel est lancé aux dentistes intéressés à venir s'établir à Maniwaki, car la population connaît des difficultés majeures en services dentaires. Nous avons un manque de professionnels en services dentaires pour desservir la Haute-Gatineau, d'une population d'environ 27,005 habitants. Les patients doivent attendre jusqu'à deux semaines pour obtenir un rendez-vous. Dans les cas urgents, nous devons nous rendre à l'extérieur, soit à Hull (82 milles) ou soit à Mont-Laurier (45 milles). La population se ligue pour cette demande et souhaite la venue de nouveaux dentistes dans notre région. Dr. Réjean Tremblay, 151 Rue St-Antoine, Pointe-Gatineau, Québec.

SASKATCHEWAN — Oral Pathologist. An academic position is available at the College of Dentistry, University of Saskatchewan for an individual qualified in Oral Pathology. Rank and salary will be commensurate with qualifications. Please address enquiries to: The Dean, College of Dentistry, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

OPPORTUNITIES WANTED

DENTIST with Graduate school of Business Administration and Master of Medical Science in health administration seeks salaried position. Reply CDA Box No. 1288.

EQUIPMENT WANTED AND FOR SALE

FOR SALE — Mobile Fraser Sweatman Quantiflex R A Relative Analgesia Machine fully equipped. Nearly new. Phone 403-422-6206. 10830 Jasper Ave., Edmonton, Alberta.

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EXCHANGE STUDENT

FRENCH-CANADIAN/ENGLISH EXCHANGE — B.C. dentist with 15 yr. old daughter invites 2 week youth exchange visit with French Canadian dental family having daughter of similar age. Please write to Dr. Walter H. Sussel, 527 Machen Ave., Chilliwack, B.C.

ALGONQUIN COLLEGE HEALTH SCIENCES DIVISION requires a Director of DENTAL HEALTH SCIENCES

Qualifications: The candidate may be a dentist or dental hygienist (holding an advanced degree.)

Duties: Responding to the Dean of Health Sciences, the Director will assume responsibility for the planning and implementation of a newly established Dental Hygiene program; will supervise the present Dental Assisting program; will maintain close liaison with both Advisory Committees; will manage the affairs of the programs and the operation of the new clinic; will develop and administer the operating budgets of these programs; will provide an effective milieu in which faculty and staff can carry out their duties; will provide faculty and students with guidance in both academic affairs and in the clinic operation. The position is a management one involving the hiring and assessment of staff.

Salary: Subject to negotiation.

The position may be required to be bilingual, as provided by established Board policy, depending on the balance of bilingual personnel in the Section. A successful unilingual candidate to a position which is determined to be bilingual, will be given the opportunity and expected to acquire adequate skill in the second language within a specified period of time.

Please apply in writing to the Personnel Office

1385 Woodroffe Avenue
Ottawa, Ontario, K2G 1V8,
not later than 31 July, 1973 quoting competition number 107-73.

HEALTH REGION NO. 1 SASKATCHEWAN

Two dentists required to operate regional dental clinics in Leader and Shaunavon in South West Saskatchewan.

Remuneration, by combination of half time salary for treatment of children plus generous commission for general practice, should be in excess of \$20,000.00 per annum.

Application forms and further information from:

Director of Dental Services,
Health Region No. 1,
129 Central Ave. N.,
Swift Current, Saskatchewan.

UNIVERSITY OF ALBERTA

Faculty of Dentistry

Anatomist/Histologist

Applications are invited for a full-time position in Oral and Dental Histology. Candidates possessing PH.D. and dental degrees will be given preference. Undergraduate and graduate teaching responsibilities, plus participation in establishing a new PH.D. Oral Biology program. Salary and rank depend on qualifications and experience. Enquiries, with current curriculum vitae, to:

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Faculty of Dentistry
University of Alberta
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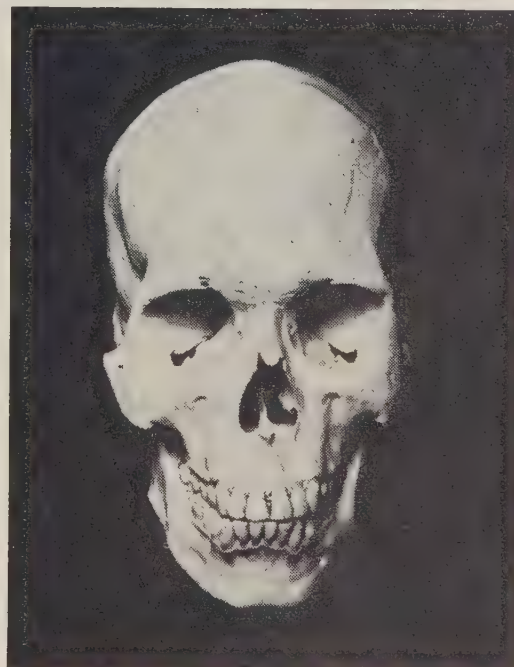
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REGISTRATION

CDA CONGRES NATIONAL ADC VANCOUVER OCT. 14 - 17, 1973 CONVENTION

CANADIAN DENTAL ASSOCIATION / L'ASSOCIATION DENTAIRE CANADIENNE

234 ST. GEORGE STREET / TORONTO / ONTARIO / CANADA / M5R 2P2 / (416) 962-3261

IMPORTANT: This form is to be completed by those desiring advance registration and accommodation in Vancouver during the forthcoming convention. Please mail the completed form, and, where applicable, your cheque for \$45.00, to the CONVENTION BUREAU at the above address. **To receive your choice of accommodation, register early! Preregistrations will not be accepted after the end of August 1973.** After August 31, please make your accommodation arrangements directly with the hotel of your choice, and register at the

convention registration facilities in Hotel Vancouver, upon your arrival. The general scientific sessions will be at both Hotel Vancouver and the Hyatt Regency Vancouver. The commercial exhibits and most section meetings will be in the Hyatt. Registration facilities, ticket sales, and most major social functions will be in Hotel Vancouver. These two headquarters hotels are very close to one another, on diagonally opposite sides of the same intersection.

Please PRINT or TYPE requested information:

DATE: _____

NAME: _____ If wife attending, name: _____
 surname given names

ADDRESS: _____

Executive or honorary status in provincial, state, national, or international organizations,

Specify: _____

Group affiliation: (e.g. CDA Section (specify), or Exhibitors)

Please indicate first, second and third choice of hotel accommodation in column entitled Choices.

CHOICES

- # _____ Hotel Vancouver
_____ Hyatt Regency Vancouver
_____ Hotel Georgia
_____ Bayshore Inn
☐ Accommodation not required

- ☐ Single
☐ Double Bed
☐ Twin Bed
☐ Suite (Specify Type)

ARRIVAL DATE _____

TIME _____

DEPARTURE DATE _____

TIME _____

NOTE: Hotels will not normally hold a room beyond 6 p.m. unless a later time is specified.

The registration fee for dentists is \$45.00. Dentists' wives may register without charge, as may exhibitors. Make your cheque payable to CDA National Conventions.

INSCRIPTION

ADC CONGRÈS NATIONAL

CDA VANCOUVER CONVENTION

Du 14 au 17 oct., 1973

CANADIAN DENTAL ASSOCIATION / L'ASSOCIATION DENTAIRE CANADIENNE

100 KING STREET, TORONTO / ONTARIO / CANADA / M5R 2P2 / (416) 962-3261

IMPORTANT: Cette formule doit être remplie par tous ceux qui désirent s'inscrire à l'avance et retenir une chambre pour le prochain Congrès qui aura lieu à Vancouver. Veuillez retourner cette formule dûment complétée ainsi qu'un chèque de \$45.00, au BUREAU DU CONGRÈS, à l'adresse ci-dessus. **Les meilleures chambres iront aux premiers inscrits! Les inscriptions prioritaires ne seront pas acceptées après août 1973.** A partir du 31 août, vous devrez faire vos réservations directement avec l'hôtel de votre choix et vous inscrire aux

guichets d'inscription du Congrès, à l'Hôtel Vancouver, à votre arrivée. Les séances scientifiques générales auront lieu à l'Hôtel Vancouver et à l'hôtel Hyatt Regency Vancouver. Les expositions commerciales et la plupart des réunions des sections auront lieu à l'hôtel Hyatt. Les Bureaux d'inscription, les ventes de billets et la plupart des fonctions sociales importantes auront lieu à l'Hôtel Vancouver. Ces deux hôtels qui serviront de centre principal sont très près l'un de l'autre, soit en diagonale en face de la même intersection.

Veuillez écrire en LETTRES MOULÉES:

DATE: _____

NOM: _____ Nom de l'épouse si elle doit venir: _____
nom de famille prénoms

ADRESSE: _____

Fonction ou rang honoraire dans un organisme provincial, national, international ou d'état,

Précisez: _____

Appartenance à un groupe, précisez: (par ex. Section de l'ADC ou Exposants)

Veuillez indiquer vos trois premières préférences dans les listes intitulées Choix.

CHOIX

- # _____ Hôtel Vancouver
_____ Hyatt Regency Vancouver
_____ Hôtel Georgia
_____ Bayshore Inn
☐ CHAMBRE NON REQUISE

- ☐ Lit simple
☐ Lit double
☐ Lits jumeaux
☐ Suite (Spécifiez le genre)

ARRIVÉE, Date: _____
Heure: _____
DÉPART, Date: _____
Heure: _____

AVIS: Normalement les hôtels ne retiennent pas une chambre après 6 p.m. exception faite sur demande.

Le prix d'inscription pour les dentistes est de \$45.00. Inscription gratuite pour les femmes des dentistes et les exposants. Rédigez votre chèque à l'ordre du Congrès National de l'ADC.

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Aug/Août 1973/Volume 39/No 8

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An audiometric method for determining the length of root canals
Factors in the identification of human skeletal remains
An examination of root canal anatomy of primary teeth
Maxillo-mandibular surgery for correction of dentofacial deformities: 6. Apertognathia (open bite)

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1. Barkley, Robert F.: Successful Preventive Dental Practices, Macomb, Ill., Preventive Dentistry Press, 1972, p. 211.

2. Goldman, H. M., et al.: Current Therapy in Dentistry, vol. 1, St. Louis, The C. V. Mosby Company, 1964, p. 64. 3. Goldman, H. M., and Cohen, D. W.: Periodontal Therapy, ed. 4, St. Louis, The C. V. Mosby Company, 1968, pp. 319-320.

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Announcements/Avis

Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont, Oct 2-5
1975 St John's, Nfld, Aug 17-20

Federation Dentaire Internationale

1974 London, England, Sept 8-14
1975 Chicago, USA, Oct 26-30

Canadian Meetings

Northern Ontario Dental Association, at Kirkland Lake, Ont. Sept 7-9, 1973. J. R. Brookfield, 2 Second St, Kirkland Lake, Ont.

Atlantic Provinces Dental Convention, at Charlottetown, PEI. Sept 16-19, 1973. S. G. Bagnall, PO Box 604, Halifax, NS.

Canadian Academy of Restorative Dentistry, at Vancouver. Oct 12-13, 1973. E. V. Gowda, Suite 201, 1590 Bellevue Ave, West Vancouver, BC.

Canadian Academy of Periodontology, at Vancouver. Oct 12-13, 1973. J. D. Stewart, 311 Rubidge St, Peterborough, Ont K9J 3P3.

Canadian Assn of Prosthodontists, at Vancouver. Oct 13, 1973. D. V. Chaytor, 5981 University Ave, Halifax, NS.

Canadian Association of Orthodontists, at Vancouver. Oct 13-15,

1973. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K M5G

Canadian Academy of Prosthodontics, at Vancouver. Oct 12-13, 1973. W. G. Woods, 123 Edward St, Toronto M5G 1E2.

Canadian Academy of Endodontics, at Vancouver. Oct 14-15, 1973. P. R. Dow, Suite 1009, 925 W Georgia St, Vancouver 1, BC.

Canadian Academy of Oral Radiology, at Vancouver, Oct 14, 1973. F. W. Musaph, Department of Oral Medicine, Faculty of Dentistry, University of British Columbia, Vancouver, BC.

Canadian Society of Public Health Dentists, at Vancouver. Oct 14-17, 1973. J. M. Conchie, 14265-56th Ave, Surrey, BC.

Canadian Dental Hygienists Association, at Vancouver. Oct 14-18, 1973. Linda J. Hunter, 3350 Cedar Crescent, Vancouver 9, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Newfoundland Dental Association, at Holiday Inn, St. John's, Nfld. Nov 7-10, 1973. Gordon Anthony, PO Box 9505, St. John's, Nfld.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

Vancouver & District Dental Society, at Hotel Vancouver, Vancouver. Dec 7-8, 1973. Vancouver & District Dental Society, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Winter Medical-Dental Assembly, at Mont Gabriel, Que. Mar 2-9, 1974. A. T. Wachna, 504 Medical Arts Bldg, Windsor 14, Ont.

Les Journées Dentaire du Québec, à l'Hôtel Bonaventure, Montréal. 1-3 mai 1974. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Que.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. May 1-3, 1974. Mr. Bastien, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Hyatt Regency, Vancouver. May 1-4, 1974. College of Dental Surgeons of BC, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Ontario Chapter, Canadian Society of Dentistry for Children, at Four Seasons-Sheraton Hotel, Toronto. May 12, 1974. A. F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 12-15, 1974. Mrs. W. C. Durham, 230 George St, Toronto 180, Ont.

Alberta Dental Association, at Palliser Hotel, Calgary. May 29-31, 1974. J. R. Duncan, 306, 1711 - 4th St SW, Calgary, Alta.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R. C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor, Ont. Oct 2-5, 1974. J. M. Conchie, 14265 - 56th Ave, Surrey, BC.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

International Meetings

Iranian Dental Association, at Tehran, Iran. Sept 11-14, 1973. Iranian Dental Association, at Tehran, Iran. Sept 11-14, 1973. Iranian Dental Association, 82 Hafez Ave, Tehran, Iran.

New Zealand Dental Association, at Queenstown, NZ. Sept 20-22, 1973. Alastair Murray, 69 Don St, Invercargill, NZ.

Japanese Association for Dental Science, at Tokyo. Sept 22-26, 1973. J. Okamura, c/o Nippon Dental College, Fujimi, 1-Chome Chiyoda-ku, Tokyo, Japan.

First French Congress of Stomatology and Maxillofacial Surgery at Paris. Sept 27-29, 1973. Secretariat Mme Palaysi Institut de Stomatologie, 47 blvd de l'Hôpital, 75013 Paris, France.

Portuguese Congress of Stomatology, at Lisbon, Portugal. Oct 17-20, 1973. Secretaria Geral do VI Congresso Português de Estomatologia, Av. R. Amélia-36-R/C, Dtº, Lisboa -5, Portugal.

International Symposium on the Immunoglobulin A System, at University of Alabama, Birmingham. Oct 23-25, 1973. F. W. Kraus, Box 103, University Station, Birmingham, Ala 35294, USA.

American Academy of Periodontology, at San Antonio, Texas. Oct 24-27, 1973. American Academy of Periodontology, Room 924, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Argentine-Brazilian-Uruguayan Dental Congress, at Buenos Aires. Oct 28-31, 1973. S.A. Coninter, Reconquista 533, Buenos Aires, Argentina

American Dental Association, at Houston, Texas. Oct 28-Nov 1, 1973. C. G. Watson, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Association of American Women Dentists, at Houston Oaks Hotel, Houston, Texas. Oct 30, 1973. Hazel F. Haughey, Cold Brook Rd, Wilmington, Vermont 05363, USA.

Association Dentaire Francaise, à Parc des Expositions, Porte de Versailles, Paris. 14-18 nov 1973. Jacques Charon, 22 avenue de Villiers, 75-Paris 17ème, France.

American Institute of Oral Biology, at Spa Hotel, Palm Springs, Calif. Nov 16-20, 1973. Membership chairman, P.O. Box 897, Gendora, Calif 91740, USA.

Associação Paulista de Cirurgioes Dentistas, at Sao Paulo, Brazil. Jan 20-25, 1974. Dr. R. Todescan, 389 Bela Vista, Caixa Postal 2523-01321, Sao Paulo, Brazil.

Jamaica Dental Association, at Sheraton Kingston Hotel, Jamaica. Jan 27-Feb 1, 1974. Keith E.R. Young, P.O. Box 19, Kingston 5, Jamaica.

German Dental Congress, at Hamburg, Germany. Apr 15-28, 1974. Bundesverband der Deutschen Zahnärzte e.V., 5 Köln 41, Postfach 410168, Germany.

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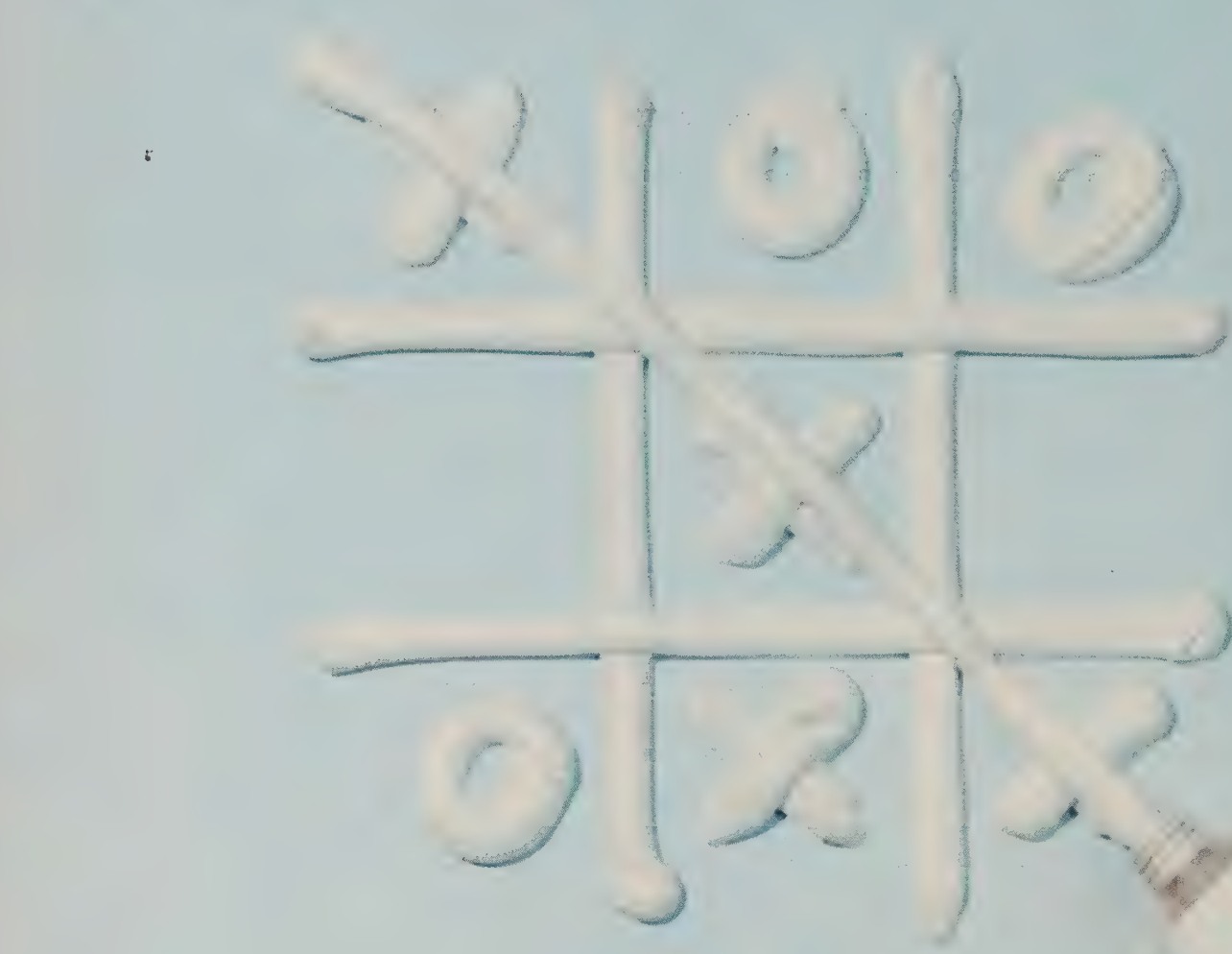
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Finn, S. B., and Jamison, H.C. Journal of Dentistry for Children, 30, 17 (1963).

2 Results: Colgate with MFP achieved 11% fewer cavities than a stannous fluoride toothpaste. Conditions: Children brushing at home with no supervision.

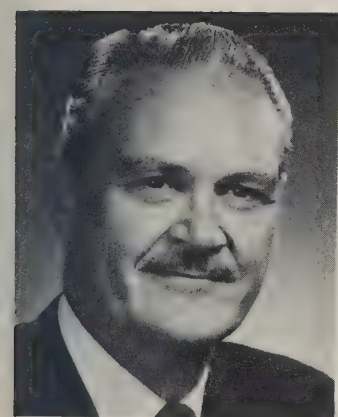
Frankl, S. N., and Alman, J. E., Journal of Oral Therapeutics and Pharmacology, 4, 443 (1968).

3 Results: Colgate with MFP achieved 5% fewer cavities than a stannous fluoride toothpaste. Conditions: Children brushing at home with no supervision in an optimal fluoridated water area.

Merget, M. E., Bulletin, Academy of Medicine of New Jersey, 14, 251 (1968).

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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

More on CDA services and programs!

The New Council on Health Care

The new CDA Council on Health Care is taking over the responsibilities previously divided among the Auxiliary Services, Dental Services and Public Health and Preventive Dentistry Councils. The Board of Governors decided to amalgamate these three councils to prevent an overlap of interests and unnecessary expenditures.

The new council's responsibilities include the collection of information on all aspects of dental auxiliaries, on dental health plans, on various delivery systems for dental care and on public assistance programs. It compiles lists of dental services with the objective of providing a comprehensive list of services using accurate and acceptable terminology. The Council has developed, in co-operation with corporate members and the Canadian Association of Accident and Sickness Insurers, claim forms and coding systems that are available to the dental profession and to insuring and other third party agencies involved in providing dental health care.

Each provincial corporate member is represented on the Health Care Council. Its resources are therefore directly available to the corporate members for whatever use they choose to make of them. These resources include such things as a new

comprehensive coded list of dental services and a new claim form that has earned wide acceptance within the profession and by insurance agencies. The Council is working to improve the relative value formula for fee determination. The CDA brochure on group practice is being revised and updated. The Association's model dental health plan for children, first presented to the profession in 1968, has been widely used as a reference. Policy statements on items such as dental prepayment plans and dental auxiliaries are available. The resources also include extensive files on all aspects of auxiliary services, dental services and dental public health programs that have been implemented, or are under consideration in Canada as well as many other areas around the world.

The Health Care Council concerns itself with timely problems. The problems have provincial connotations but in most instances they also transcend provincial boundaries.

If the objectives of the Health Care Council were not being attempted by some national agency, there would be no national co-ordinating force in the production of a comprehensive list of dental services, in developing uniform terminology, coding, claim forms, relative value fee determination formulae, etc. If each provincial dental association undertook to deal with the various problems independently the duplication of effort would be wasteful; dentists in one province would not readily benefit from the expertise and knowledge of dentists in other parts of the country.

Question 2

Do you believe the CDA should have a council with all provinces represented which deals with the areas of service that have been identified with the Council on Health Care and which have both provincial and national significance?

Please indicate "yes" or "no" with reasons for your answer.

Library Services

The Canadian Dental Association's Sydney Wood Bradley Memorial Library now has an inventory of approximately 5,000 texts and 400 monthly periodicals, including many foreign language

EDITORIAL

CONJOINT ASSOCIATION MEMBERSHIP

The dental associations, whether they be national, provincial or local, exist to serve two indispensable purposes. Perhaps the most obvious one is to aid the practitioners themselves by offering opportunities for continuing education at conventions and other meetings, by operating group insurance and pension plans, by communications through journals and newsletters and, not the least, by social and leisure time activities with fellow dentists. The second function is to carry out, through united effort, the many professional obligations relevant to the public's dental health that cannot be done by private practitioners from their individual offices. Promotion of preventive dental measures such as fluoridation, public health education, recruitment of dental students, accreditation of schools, promotion of specialties and research, national and international liaison, etc, are professional obligations in the same sense as provision of service. Maintaining membership in both

the Canadian Dental Association and his particular provincial association is the way in which the individual dentist assumes responsibility for his professional role beyond the walls of his own office. In the simplest terms, conjoint membership means that you pay only one fee and receive full membership in both your provincial and national associations. This has been automatic in Canada for many years during which association membership was paid at the same time as the licentiate fee. Soon in Ontario, and possibly in other provinces, membership in the dental associations will be voluntary, involving a membership fee separate from that required for licensure. This trend should be welcomed as a clarification of the domains of our professional responsibility and the beginning of a new era in which the contributions of the voluntary dental associations to the oral health of the Canadian people will be more clearly discernible.

R.M.G.

Executive Director's Page

(from page 495)

journals. Funds for the purchase of books and subscriptions to periodicals are generated from a capital fund, generously established by the late Dr. Sydney Wood Bradley of Ottawa.

All the books and periodicals in the library are catalogued for the convenience of the Association's members. Library catalogues with supplements, when necessary, are available to the members. New editions to the library are listed periodically in the Journal of the Canadian Dental Association.

In addition to the many dentists and CDA student members who visit the library personally each month, dentists by the hundreds from all across Canada borrow books and avail themselves of other library reference services as are provided by the

librarian, Miss Colette Gagnon. Texts and periodicals are available on free loan to all CDA members. Postage costs covering mailing to the borrower and back to headquarters are provided as a service by the Association.

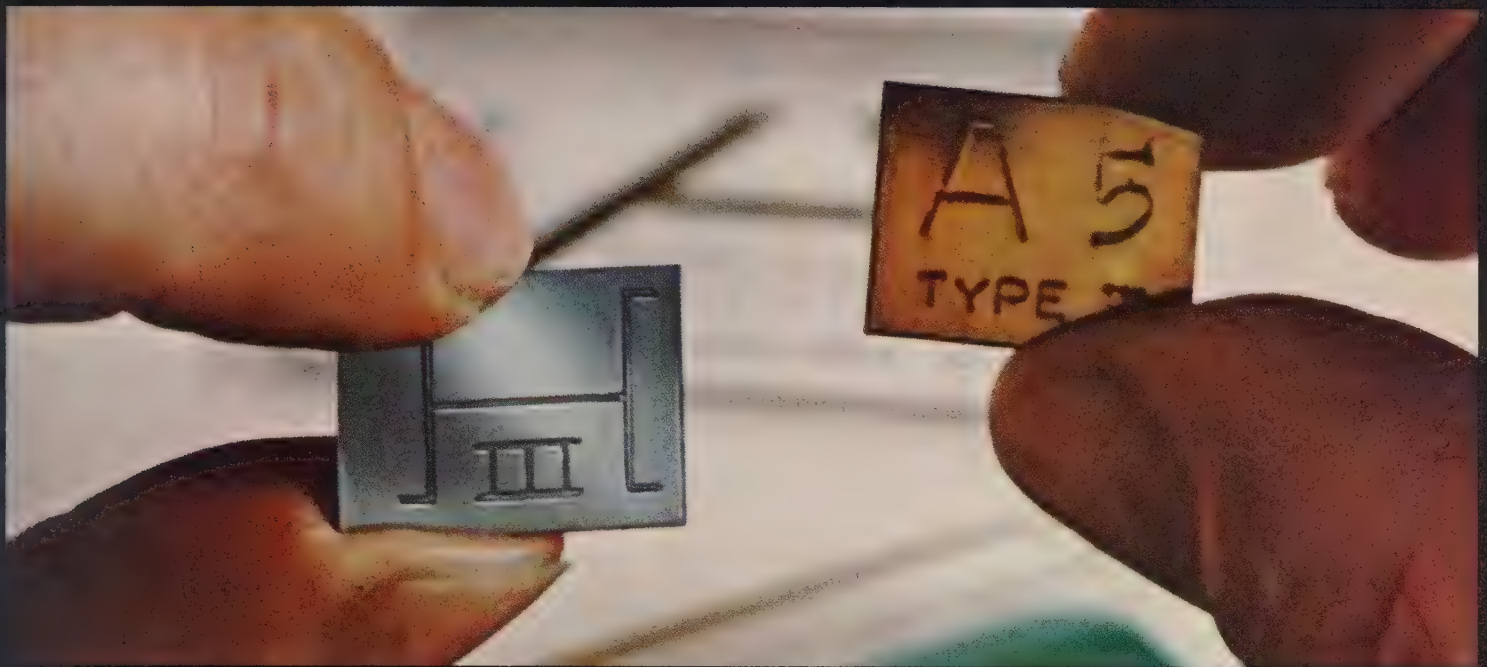
Dentists, particularly in non-university communities, are taking advantage of these services in ever increasing numbers.

I am not aware of any similar library loan service to the dentists in Canada. Therefore, if the program were stopped, this one vital component of the continuing education process would not be available.

Question 3

Do you believe the free loan and reference library facilities offered by CDA to the dentists of Canada is a service that your National Association should provide for its members? "Yes" or "no" with reasons, please.

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Dentistry in the news

Canada and the Provinces

Denturists accused of performing orthodontic treatment and extractions

Denturists have been carrying out orthodontic treatment and extractions as well as making dentures, according to the Newfoundland Dental Board.

In a brief prepared for presentation to a select committee of the province's House of Assembly, the Board said unsuspecting Newfoundlanders patronizing denturists risk serious illness because denturists have had no experience or training in the biological and pathological conditions influencing denture construction.

The brief was signed by the provincial deputy minister of health, Dr. D. Cant, and four dentists, Dr. George P. French, Dr. D.A. Hollett, Dr. W.J. O'Driscoll and Dr. David K. Peters, president of the Canadian Dental Association.

The select committee, which is investigating illegal denturists, was told in the brief that "at best, illegal mechanics (denturists) offer a second class denture service... should such untrained people's activity become legalized, the public would be led to believe the mechanics have the abilities they have not."

The Board, which is responsible for enforcement of the Dental Act, said the refusal of illegal mechanics to work with other health workers, preferring to be a separate, fragmented entity, "constitutes their biggest threat to the public interest."

The Dental Board said it had received complaints about denturist establishments, including unsanitary conditions, and refusal to refund money paid for dentures which had never been produced. Dentures pro-

duced by denturists have shown extreme porosity which encourages stains, bacteria and odours, and in some cases free sample teeth had been used in dentures sold to the public. Lower teeth also had been used in upper dentures and vice versa.

"It is through examination of patients by dentists, often when they are receiving a denture service, that many oral diseases, including cancers, are diagnosed," the Board said in its brief.

Many patients in need of dentures require other dental work which can only be performed by a dentist, the Board said. This includes retained roots and unerupted or impacted teeth which must be surgically removed to avoid "discomfort, infection and abuse of patients' health."

Regarding dentists' fees, the Board said it had received no complaints of exorbitant fees by dentists.

The Board told the select committee there is an acute shortage of den-

tists in Newfoundland. However, because denture patients require many appointments of short duration they can be worked in while other patients are waiting for anaesthesia or fillings.

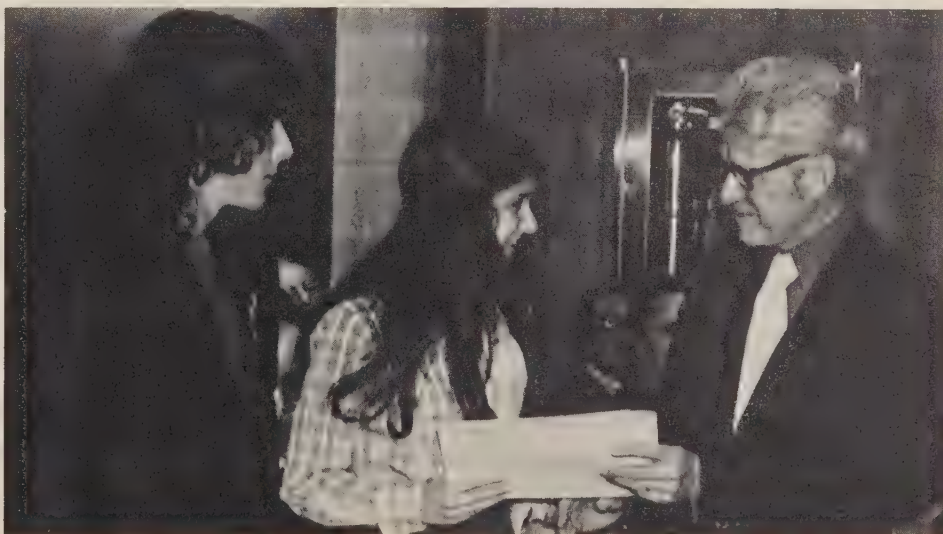
"There is no lengthy waiting period required for denture service" from Newfoundland dentists, the brief said.

The Board recommended against legalization of denturists and said the Dental Act should be enforced "to protect people from those who hold no recognized dental training."

It also called for an "in-depth study of ways and means of increasing dental manpower in accord with needs recognized by the Health Department — dentists, dental hygienists, dental nurses and dental assistants."

The Board also said emphasis should be given to preventive programs, including fluoridation, and restorative programs, beginning with children.

Dr. S.P. Smith of Thunder Bay presents the Canadian Dental Association awards during the 12th Canada-wide Science Fair held at Lakehead University, Thunder Bay. Elizabeth Dianne Fleming, a grade 13 student from Cambridge, and James Draper, a grade eight student from Niagara Falls, each received an illuminated scroll and \$100 in cash. CDA is one of the sponsors of the Youth Science Foundation which promotes extra-curricular science activities and organizes the annual fair.



Dalhousie educator says legalization of denturists is "economically absurd"

Graduates of dental schools are the only people capable of rendering denture service, according to the head of the Division of Removable Prosthodontics at Dalhousie University's Faculty of Dentistry.

Dr. D.V. Chaytor said in an appearance before the Newfoundland Assembly's select committee investigating denturists that a person providing prosthodontic dental treatment must be knowledgeable of other areas of dentistry and must have sufficient knowledge of the medical sciences to recognize the significance of systemic disease in relation to oral health.

The Dalhousie educator told the committee that legalization of denturists would require extensive additional education which would be "economically absurd."

Dr. Chaytor described the prosthodontic field of dentistry as not merely the delivery of false teeth or dental plates, but "the provision of treatment appropriate to the needs of the patient to aid in the restoration and preservation of the ability to eat, speak and look normal." He declared that illegal denturists are not qualified to carry out this function.

Commercial Dental Laboratory Conference donates services

The recently formed Commercial Dental Laboratory Conference, a group whose aims are the advancement of dentistry and to work for the dentist solely by prescription, have announced a donation of \$8,000 to \$10,000 per year to the SHOUT Dental Clinic. The donation will take the form of free laboratory services which will be provided by the members of the Conference throughout the year. SHOUT is the student operated dental clinic, under the supervision of the Faculty of Dentistry, University of Toronto, which provides dental care for low income families in Toronto.

See page 517 for special section on 1973 CDA Convention

International Items

ADA trustees issue statement on unions

The American Dental Association's Board of Trustees recently issued a statement declaring its conviction that unions have no appropriate role to play for dentists.

In the opinion of the board: "There is nothing that a union can accomplish, for the benefit of dentists and their patients, that a professional association having active, united support cannot do equally well, and an association does not risk the destruction of the long-held public view that dentists are every bit as committed to the public's well-being as they are to the protection of their own legitimate self-interests."

The unionization movement for health professionals was also strongly criticized by Bernard J. Conway, ADA assistant executive director for legislation and legal affairs, during the 24th Annual Management Conference held recently at ADA headquarters in Chicago.

Citing the fact that the health professions face serious challenges from government, insurance companies and consumer groups, Mr. Conway said he did not believe that dentists or physicians can suddenly thwart all their foes by joining and supporting professional unions.

New research grant established

Students of accredited dental schools in Canada will share in a new research award established by the Johnson & Johnson Dental Products Company in cooperation with the International Association for Dental Research.

Designed to encourage student researchers, the award will be offered to all accredited dental schools in Canada, the United States and Mexico, and to one student in each of the divisions of IADR: Britian, Scandinavia, Central Europe, South Africa, Japan, Australia and South America. Purpose of the grant will be to provide funds for some 70 students to attend the annual IADR meeting.

The grant will be administered by the International Association for Dental Research.

Fluoridation

Health and Welfare, Canada, continues to support fluoridation

The following are extracts from a letter dated March 9, 1973 to the Executive Director, Canadian Dental Association, from an official of the Department of National Health and Welfare, Ottawa, concerning the Department's attitude towards fluoridation information and promotion:

"The Department continues to recognize that the fluoridation of municipal water supplies is a safe, effective and economical method of reducing the incidence of dental disease, and appreciates the contribution that the Canadian Dental Association has made to the publicizing of this valuable health measure . . . I am able to assure you that your concerns for fluoridation are not being lost sight of, as illustrated by the following arrangements which have recently been approved.

"The Health Programs Branch continues to retain the responsibility for stimulating, proposing and assisting in the design of departmental programs to promote fluoridation for dental purposes and also for the provision of technical information concerning the effects on dental tissues of fluorides, either systemically or topically applied by professionally approved methods and in approved concentrations. This will be a particular responsibility of the Dental Consultant within the Branch.

"The Health Protection Branch has the responsibility for all other matters relating to fluorides. These include, in addition to the provision of information relative to fluorides in foods and beverages and their effects in other than dental tissues, the assembling of data from the provinces for the production of a publication to serve a similar purpose to that of your publication 'Fluoridation in Canada'. This will be produced at three-year intervals as an official publication of the Department

and will be available, on request, to the public."

Correspondence should be addressed to either Branch as seems appropriate.

Toronto children benefit from fluoridation

A fluoridated water supply is a most effective way to cut cavities, especially when supplemented by other preventive programs, says Toronto's dental director, Dr. J. McGaughey.

In the annual report of the city's Department of Public Health, the dental director shows that in 1972, of every 100 five year olds examined, 51 were found to be free of all dental decay compared to only 27 for a similar age group checked in 1963, a gratifying improvement over a nine year period.

The report states that in 1963 among five year olds, 25.06 per cent had lost teeth because of dental decay while in 1972 the figure was only 10.48 per cent. In 1963, the five year old children had an average 3.87 teeth decayed, prematurely missing or restored. In 1972, the number was 1.83, an average reduction of 52.7 per cent.

The fluoride content of the metropolitan water supply was adjusted in September 1963 to the recommended level of one part per million. The water is supplied to 2,100,000 people in the city and the five boroughs.

Even among older children a marked improvement is shown by the

report. The dental division statistics include random sampling of one to seven, odd age groups, ages 5-19 years. These show that over these ages 20 per cent of these children are caries-free compared to 10.73 per cent in 1963. The average child in 1972 had 2.76 decayed, missing or filled teeth compared 4.05 teeth nine years earlier, a reduction of 31.8 per cent.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on June 30, 1973:

Guaranteed Fund \$20.241;

Fixed Income Fund \$13.867;

Common Stock Fund \$29.000.

Total assets (market value) of the plan were \$15,638,244.34.

The following purchases and sales occurred during the preceding month: bought, \$300,000 Royal Trust Company GIR; 8,400 shares Canada Permanent Mortgage Corp.; 2,500 shares Dominion Foundries and Steel; 2,000 shares Imperial Oil; 12,000 shares Scott's Restaurants; sold \$150,000 Royal Trust Company GIR; and 1,500 shares Getty Oil Company.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St George St, Toronto, Ont M5R 2P1.

Deaths

Bregman, Ralph Charles. 63. Toronto. University of Toronto, 1933. 23-6-73. Survived by Anne (wife), and Mrs. S. Sugar (daughter).

Cox, Elwood L. 86. Ganges, BC. Chicago College of Dental Surgery, 1909. 21-6-73. Survived by Mrs. J. K. Wallace and Mrs. J. Taylor (daughters).

Ewing, Ernest Hamilton. 79. Toronto. Royal College of Dental Surgeons of Ontario, 1924. 22-6-73. Survived by Pearl (wife); Lloyd (son); and Mrs. L. O'Neill (daughter).

Jackson, William James Spence. 74. Toronto. University of Toronto, 1929. 19-6-73. Survived by Lillian (wife), and S.G. Roger (son).

Joynt, William Thomas. 60. London, Ont. University of Toronto 1937. 13-6-73.

Laidlaw, Myron Lewis. 85. Toronto. Royal College of Dental Surgeons of Ontario, 1910. 4-7-73. Survived by Myron William (son), and Mrs. W.P. Hair (daughter).

MacDougall, George Gregory. 73. Sussex, NB. Dalhousie University, 1924. 31-5-73. Survived by Ruth (wife); Mrs. Margaret Pullin and Mrs. Marilyn Glambeck (daughters).

Morton, Joseph Francis. 75. Southampton, Ont. Royal College of Dental Surgeons of Ontario, 1919. 31-5-73. Survived by Elizabeth (wife), two sons and two daughters.

Roberts, James Gratton. 87. Sooke, BC. Royal College of Dental Surgeons, 1908. Survived by Dr. I.M. Roberts (sister).

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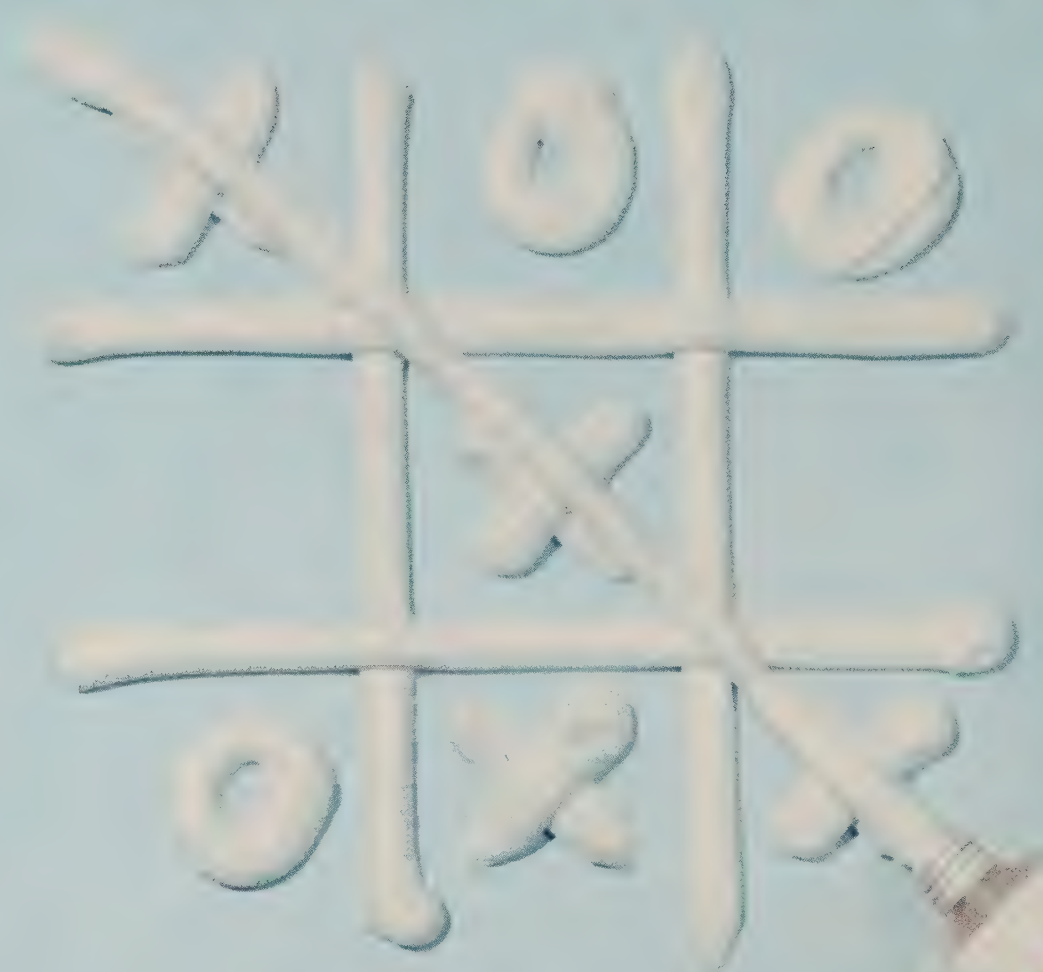
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1 Résultats: 27% moins de caries à l'emploi de Colgate avec MFP, en comparaison avec un dentifrice au fluorure stanneux. Conditions d'étude: brossage par des enfants, à l'école, sous une surveillance suivie.

Finn, S. B., and Jamison, H. C. Journal of Dentistry for Children, 30,17 (1963).

2 Résultats: 11% moins de caries à l'emploi de Colgate avec MFP, en comparaison avec un dentifrice au fluorure stanneux. Conditions d'étude: brossage par des enfants, à la maison, sans surveillance.

Frankl, S. N., and Alman, J. E., Journal of Oral Therapeutics and Pharmacology, 4,443 (1968).

3 Résultats: 5% moins de caries à l'emploi de Colgate avec MFP, en comparaison avec un dentifrice au fluorure stanneux. Conditions d'études: brossage par des enfants, à la maison, sans surveillance, dans une région où l'eau contenait du fluorure dans des proportions idéales.

Mergele, M. E., Bulletin, Academy of Medicine of New Jersey, 14,251 (1968).

Colgate au fluorure MFP.* Un traitement au fluorure amélioré

Le Congrès national

Des cliniciens de premier plan dirigent un programme bilingue

Le docteur Claude Chicoine a révélé la teneur du programme scientifique à l'intention des dentistes francophones. Deux cliniciens de premier plan, les docteurs Pierre Désautels et Jacques Fiset présenteront des cliniques dans leurs spécialités respectives. Les deux communications seront faites en français et en anglais afin de permettre à tous les dentistes présents d'y participer activement.

Le docteur Désautels poursuit actuellement des recherches dans le domaine des matériaux dentaires à l'Université de Montréal. Il est membre de l'Association internationale pour la recherche dentaire et membre du Comité consultatif du Conseil canadien des normes. Il a aussi été chargé de travaux sur les matériaux dentaires et leurs caractéristiques pour le compte de l'Association dentaire canadienne.

Le docteur Pierre Désautels a fait ses études à l'Université de Montréal et à l'Université Purdue de l'Indiana et s'est spécialisé dans le domaine de l'utilisation des matériaux en pratique dentaire. A Vancouver, il traitera des angles incisifs par l'application de la technique de la gravure: 14 mois."

Le docteur Jacques Fiset ex-président de l'Académie canadienne de prosthodontie présentera une clinique sur "Les différentes méthodes de traitement des dentures terminales."

La clinique du docteur Fiset portera sur les situations extrêmes ne comportant que quelques dents débiles. Elle englobera la classification des cas ainsi que la comparaison et

l'évaluation de la chape et de la barre d'attachement, au regard des principes fondamentaux de la construction des dentiers partiels. Le clinicien s'attachera surtout à exposer les caractéristiques des attachements à pince interne (internal clip) et la "Céka".

En plus du programme scientifique mentionné précédemment, les organisateurs projettent aussi des cliniques de table et en capsule portant sur une variété de sujets programmés de manière à permettre aux membres de pouvoir participer aux séances qui les intéressent spécifiquement. Les renseignements et l'horaire de ces activités seront publiés sous la rubrique consacrée aux nouvelles du Congrès, dans les numéros subséquents de la revue. Cette rubrique renseignera aussi les membres sur les rencontres avec les divers spécialistes et les groupements auxiliaires.

Frais et politique adoptée pour l'inscription

L'Association dentaire canadienne a mis au point de façon définitive la question des frais d'inscription et celle de la politique qui sera suivie pour le Congrès national 1973 qui sera tenu à Vancouver du 14 au 17 octobre prochain.

Les dentistes qui s'inscrivent au Congrès général, devront verser \$45. Aucun supplément ne sera réclamé pour les épouses qui participeront au programme féminin. Chaque congressiste devra de plus régler ses propres frais de séjour.

Les étudiants membres de l'ADC n'auront pas à verser de frais d'inscription. Les étudiants non membres verseront \$5 pour le même privilège qui leur accordera, en outre, tous les avantages des étudiants membres au cours de l'année 1973-74.

Le dentiste et la psychologie

"Teeth are emotional"! Ainsi s'intitule une communication qui sera présentée par le docteur Kenneth J. Olson, un clinicien en psychologie renommé, de Phoenix, Arizona.

Le docteur Olson est sans contredit l'une des autorités les plus reconnues de domaine des communications, des changements du comportement dans ses interactions avec la pratique dentaire, plus particulièrement avec la dentisterie préventive. Le conférencier envisagera le sujet traité comme une philosophie de l'homme plutôt qu'en fonction d'une technique se bornant à obturer les dents.

La communication sera centrée sur la dentisterie et le dentiste envisagés du point de vue du patient. La notion de la peur et les techniques pouvant surmonter les craintes du patient seront traitées en fonction de l'évolution du changement d'attitude et de la résistance qui s'y oppose. De plus, le conférencier étudiera la motivation dans ses rapports avec l'hygiène dentaire préventive ainsi que la création et le maintien d'un système de valeur touchant la santé dentaire.

Le Docteur Olson est membre de l'American Society for Preventive Dentistry et de l'American Psychological Association. Il nous apporte une perspective interdisciplinaire permettant d'envisager la dentisterie comme une entité tout en considérant ses relations particulières avec le patient.

Une spécialiste en prothèses dentaires traitera de la malocclusion

Le docteur Niles Guichet de Anaheim, Californie, traitera de "La conception moderne de l'occlusion" dans la

communication qu'il présentera dans le cadre du programme scientifique du Congrès de l'ADC.

La communication du docteur Guichet établira comment la conception de l'occlusion peut s'appliquer en vue des principes d'administration susceptibles d'accroître la productivité, d'assurer une meilleure utilisation du personnel auxiliaire, de favoriser la pratique plus efficace de la dentisterie et d'établir une pratique dentaire. Le conférencier expliquera aussi comment obtenir une meilleure contribution du laboratoire à partir de relations améliorées entre le dentiste et le technicien. Il discutera aussi du graphique d'acheminement des tâches et de l'analyse des coûts de revient des diverses techniques de traitement occlusal.

Le docteur Guichet est membre de l'American Board of Prosthodontics, de l'American Prosthodontic Society, de l'American College of Prosthodontists, de l'American Equilibration Society, d'Omicron Kappa Upsilon, de l'Academy of General Dentistry, de la Western Society of Periodontology et membre associé de l'Academy of Denture Prosthetics, ainsi que professeur invité à l'Université de l'Alabama. Il vient de terminer un stage d'études post-universitaires de quatre années (représentant au delà de 280 cours portant sur les principes de l'occlusion, aux Etats-Unis, au Canada, en Europe et en Orient). Il s'est aussi attaché à mettre au point des méthodes améliorées de traitement occlusal. Le docteur Guichet est persuadé que la connaissance des principes de l'occlusion est susceptible de modifier la pratique du dentiste en lui permettant d'accomplir des interventions de plus vaste portée avec davantage de précision et de rapidité que ne lui assurait l'application des techniques conventionnelles.

Communication présentée par un radiologiste de réputation mondiale

Le docteur Harry M. Worth, chargé de cours en radiologie à la Faculté de dentisterie de l'Université de Toronto, présentera une clinique intitulée: "Mechanism of Disease of the Jaws as

it May Concern Dentists and Their Radiologic Correlation."

La communication du docteur Worth comportera une description succincte de l'anatomie de l'os concerné et des modifications possibles des tissus. Ses considérations porteront surtout sur les principales maladies dentaires et la description des modifications qui s'ensuivent en relation avec l'image radiologique. La présentation sera accompagnée d'une révision sous forme de projections radiographiques. Elle touchera aussi les infections aiguës et chroniques (comprenant l'évolution de l'abcès), les granulomes, les kystes et la périodontoclasie, tout en faisant état des affections qui leur ressemblent et qui nécessitent un diagnostic différentiel. Parmi ces dernières mentionnons l'ostéofibrose périapicale, l'hystiocytose X et les tumeurs.

En plus de donner des cours dans plusieurs facultés de dentisterie, le docteur Worth est rattaché, en qualité de consultant, à plusieurs hôpitaux nord-américains comprenant l'Hôpital for Sick Children de Toronto, le Shaughnessy Hospital, et le Department of Veterans Affairs de Vancouver. Le docteur Worth est membre à vie de l'Association canadienne des radiologistes et Fellow du Collège royal des médecins du Canada.

Le Canada

Composition des conseils d'administration des établissements du réseau d'affaires sociales

Voici qu'elle sera la composition des conseils d'administration des établissements du réseau des affaires sociales après les élections du mois de juin.

Centres hospitaliers

— Deux personnes élues pour un an par les usagers.

— Deux représentants de la population nommés par le lieutenant-gouverneur en conseil pour deux ans après consultation des groupes socio-

économiques les plus représentatifs du territoire desservi par le centre.

— Une personne désignée pour un an par le conseil consultatif des professionnels.

— Une personne élue pour un an par les employés non-professionnels.

— Un représentant nommé par les conseils d'administration des CLSC (reliés par contrat d'affiliation) nommé pour un an.

— Quatre membres de la corporation élus pour deux ans.

— Une personne désignée pour un an par le conseil des médecins et dentistes.

— Une personne élue pour un an par les internes ou les résidents.

— Le directeur général (voix consultative).

Centres locaux de services communautaires

— Cinq usagers élus pour un an.

— Deux représentants de la population nommés par le lieutenant-gouverneur en conseil pour deux ans.

— Un employé professionnel élu pour un an.

— Un employé non-professionnel élu pour un an.

— Un représentant nommé par les conseils d'administration des CH (reliés par contrats de services) pour un an.

— Un représentant nommé par les conseils d'administration des CSS (reliés par contrats de services) pour un an.

Centres d'accueil

— Deux usagers (ou parents d'usagers) élus pour un an.

— Deux représentants de la population nommés par le lieutenant-gouverneur en conseil pour deux ans.

— Un employé professionnel élu pour un an.

— Un employé non-professionnel élu pour un an.

— Un représentant de l'université (reliée par contrat d'affiliation) nommé pour un an.

— Deux membres de la corporation élus pour deux ans.

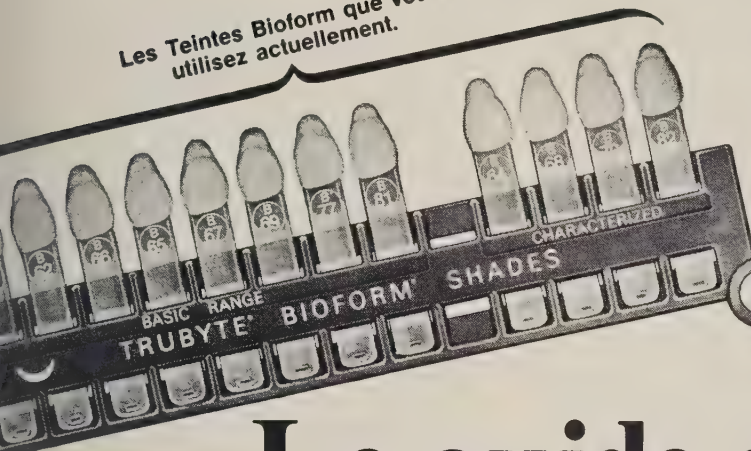
— Un représentant nommé par les conseils d'administration des CSS (reliés par contrats de services) pour un an.

— Le directeur général (voix consultative).

(Suite à la page 506)

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Centres de services sociaux

- Deux usagers élus pour un an.
- Deux représentants de la population nommés par le lieutenant-gouverneur en conseil pour deux ans.
- Un professionnel désigné pour un an par le conseil consultatif des professionnels.
- Un employé non-professionnel élu pour un an.
- Deux représentants nommés par les conseils d'administration des CLSC (reliés par contrats de services) pour un an.
- Un représentant de l'université (reliée par contrat d'affiliation) nommé pour un an.
- Le directeur général (voix consultative).

important: Les conseils d'administration des CSS seront provisoires en juillet. Ils ne deviendront permanents qu'au début de l'année 1974.

Cependant, le Conseil des services sociaux du Nord-Ouest étant déjà formé, les élections auront lieu en juin.

Cinq comités de revision verront à reprimer les abus de certains professionnels de la santé concernant les paiements de l'assurance-maladie

Le projet de loi modifiant la Loi de l'assurance-maladie et la Loi de la Régie de l'assurance-maladie du Québec, déposé récemment à l'Assemblée nationale par le ministre des Affaires sociales, monsieur Claude Castonguay, propose la création de cinq comités de revision qui verront à enquêter sur les cas d'abus décelés par la Régie de l'assurance-maladie concernant les actes de certains professionnels de la santé.

Ces comités seront composés de quatre membres choisis parmi les professionnels impliqués et d'une personne choisie en dehors des professionnels concernés par une entente dans le cadre du Régime d'assurance-maladie.

La création de ces comités de revision a été rendue nécessaire parce qu'il n'existe aucun organisme actuellement ayant des pouvoirs adéquats pour apprécier l'aspect économique des profils de pratique professionnelle jugée abusifs ou injustifiés par la Régie. En vertu de l'article 19a) de la Loi de l'assurance-

maladie, la Régie ne peut refuser de payer le coût des services assurés pour le motif qu'elle met en doute la qualité d'un acte pour lequel il est demandé paiement, non plus qu'elle ne peut déterminer la fréquence d'un acte susceptible d'être payé.

Des comités de revision de nature analogue sont actuellement en fonction dans les neuf autres provinces du Canada.

Mandat de chaque comité

Le projet de loi propose donc la création d'un comité de revision pour chacune des catégories de professionnels de la santé avec lesquelles le gouvernement a conclu ou pourra conclure une entente dans le cadre du régime d'assurance-maladie, à l'exception des pharmaciens; soit: les médecins spécialistes, les médecins omnipatients, les spécialistes en chirurgie buccale, les chirurgiens-dentistes et les optométristes.

Chaque comité aura la responsabilité d'apprécier les cas où, dans l'opinion de la Régie, elle a été appelée à payer pour des services qui n'étaient pas requis aussi fréquemment, ou que ces services ont été dispensés de façon abusive ou injustifiée, ou que la nature de ces services a été fausement décrite.

Après enquête, ces comités de revision auront le pouvoir de recommander à la Régie, qui serait liée par leur recommandation, soit de payer le montant réclamé en totalité ou en partie, soit de refuser de payer ce montant, soit d'exiger le remboursement de ce qui a été payé en trop.

La Régie, en soumettant un cas au comité de revision approprié, devra aviser par écrit le médecin, le chirurgien-dentiste ou l'optométriste concerné.

Revision des cas depuis le premier janvier 1971

La Régie pourra soumettre à l'étude d'un comité de revision tout cas relatif à des services assurés rendus depuis le premier janvier 1971. L'article 50 de la Loi de l'assurance-maladie sera modifié à cet effet, car tous les cas abusifs ou injustifiés décelés par la Régie avant l'entrée en vigueur du présent projet de loi n'ont pu être soumis à de tels comités de revision.

Composition des comités de revision fondée sur l'autodiscipline

Le ministre des Affaires sociales estime que les comités de revision ne sauraient fonctionner efficacement sans la participation active de représentants des corporations professionnelles et des associations ou fédérations concernées.

Afin de refléter cette réalité dans la loi, la composition de chaque comité de revision sera fondée sur la participation directe des professionnels au maintien de profils de pratique justifiés. Ainsi, chaque comité sera composé de cinq membres nommés par le lieutenant-gouverneur en conseil qui désignera parmi eux un président. Un de ces membres est choisi à partir d'une liste d'au moins cinq noms suggérés par la corporation professionnelle concernée et trois autres parmi une semblable liste fournie par la fédération ou association concernée. Le cinquième membre de chaque comité est nommé sur recommandation de l'Office des professions du Québec en dehors des professionnels concernés par une entente dans le cadre du Régime d'assurance-maladie. Ces personnes ne doivent pas occuper une charge au sein de la corporation professionnelle et de l'association ou fédération concernées.

Rapport à l'assemblée nationale

Chaque comité de revision devra, au plus tard le 31 mars de chaque année, faire au ministre un rapport de ses activités pour l'année se terminant le 31 décembre précédent.

Les services dentaires seront compris dans le programme d'assurance-maladie

Le gouvernement du Manitoba a l'intention d'incorporer l'assurance couvrant les appareils de correction auditive, les lunettes, les prescriptions médicales, les services ambulanciers et les soins dentaires au cours des quatre prochaines années, a déclaré Monsieur René Toupin, ministre de la santé et du développement social.

A l'occasion d'une entrevue récente aux media d'information, monsieur

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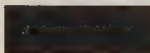
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Toupin a expliqué que dans le cours de l'année dernière le coût des services de santé pour la province s'est stabilisé et que le gouvernement recherche les moyens d'accroître la disponibilité des soins de santé globaux dans toute la province plutôt que de se contenter de maintenir le contrôle sur les prix. Il ajouta que l'extension de l'assurance-maladie dans le but de couvrir ces services additionnels ne dépassera pas les possibilités financières de la province.

Monsieur Toupin a révélé en outre que la pénurie de main-d'oeuvre avait été le principal obstacle à la mise en oeuvre plus hâtive de ces programmes. Ce fait s'applique particulièrement au programme de soins dentaires. Toutefois, monsieur Toupin ajouta que le gouvernement est à mettre sur pied des programmes destinés à former un plus grand nombre de dentistes et de techniciens dentaires afin d'être en mesure de distribuer les soins dentaires dans toute la province.

Le programme du Manitoba s'apparente à celui de la Saskatchewan. Il comprend les services aux enfants d'âge scolaire d'abord et s'étend ensuite graduellement à toute la population au cours d'une période de cinq années.

Subventions à trois cliniques dentaires d'été

Le ministère des Affaires sociales subventionne, pour des montants totali-

sant \$225,840, trois cliniques dentaires d'été organisées par des universités québécoises. Ces subventions sont accordées sur la recommandation de la Direction de la formation et du perfectionnement.

Les bénéficiaires de ces subventions sont la clinique dentaire d'été de l'Université de Montréal: \$130,000; le Children's Summer Dental Programme de l'Université McGill: \$66,240.40; la clinique dentaire d'été de l'Ecole de médecine dentaire de l'Université Laval: \$29,600.

Les subventions permettent à ces trois universités de mettre sur pied des programmes pratiques d'été pour les étudiants en médecine dentaire, en dispensant à une population de jeunes qui proviennent des milieux défavorisés, des consultations gratuites visant au dépistage des caries, au nettoyage et détartrage des dents de même qu'aux soins dentaires élémentaires.

Le recrutement des jeunes se fait par la voie habituelle, annonces à la radio, publicité dans les commissions scolaires et les hôpitaux; à Montréal, les services de santé de la ville acheminent également les cas de problèmes dentaires à ces deux cliniques d'été, celles de l'Université de Montréal et de l'Université McGill.

Les étudiants en médecine dentaire prêtent une attention particulière à l'éducation populaire. Les jeunes recevront des conseils pratiques pour conserver une saine dentition.

La direction de la formation et du perfectionnement, en collaboration

avec les établissements, travaille à relever la qualité des services de santé et des services sociaux donnés à la population québécoise en améliorant la compétence des professionnels qui dispensent ces services.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 juin 1973:

Fonds avec garantie \$20.241;

Fonds à revenu fixe \$13.867;

Fonds d'actions ordinaires \$29.000.

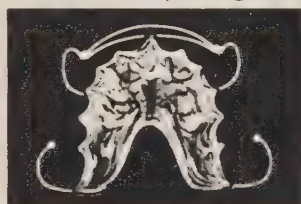
L'avoir total (valeur marchande) du régime se montait à \$15,638,244.34.

Au cours du mois précédent, les transactions ont été les suivantes: achat \$300,000 Royal Trust Company GIR; 8,400 actions de Canada Permanent Mortgage Corp.; 2,500 actions de Dominion Foundries and Steel; 2,000 actions de Imperial Oil; 12,000 actions de Scott's Restaurants; vente \$150,000 Royal Trust GIR; et 1,500 actions de Getty Oil Company.

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Where the mountains dip to the sea

The following was written as an editorial by Dr. Frank H. Compton prior to the 1968 CDA convention in Vancouver. Since the 1973 National Convention will also be held in Vancouver, the editors felt this vivid and sensitive description of Canada's beautiful west-coast city was well worth repeating.

The approach from the east, whence most visitors come, is a spectacular array of mountain ridges, seamed and furrowed with snow, the deep and narrow valleys floored by the reflected blue or steel-grey of lakes. Settlements are tiny and scattered. The few roads to be seen climb out of nothing into emptiness. Then comes the widening green of Fraser delta and the proliferating urban sprawl bordering dappled waters of the Gulf of Georgia. At night the transition is even more dramatic, from occasional dim and tiny lights scattered through black immensity to the jewelled glare of neon and mercury vapour laced with ribbons of light that trace a pattern of beauty for miles on every side.

Here is a metropolis that grew from a sawmill, a dock and a saloon — from Gassy Jack's Gastown. The rich glare of its lights is the yield of 100 years of man burrowing into the mountains, stripping trees from timbered slopes, raking the coastal seas, fighting inland rivers, threading the narrow canyons, and chancing cattle among the gentler and kindlier valleys. Grandly the city stretches around the bays and inlets, the great fingers of water gnarled with docks and speckled with the world's ships. Its towers reach for the sky behind a lacing of beaches. Homes spread

out on every side, over rocky shores and up the timbered slopes of the North Shore Mountains.

Vancouver presents as many images as there are eyes to see. For some the city revolves around a plush office high in the sky while the first September gales from the Straits of Juan de Fuca whistle harmlessly over the glass walls. For others it is a zoo hard by the cedars and Douglas firs of Stanley Park. Vancouver is the annual hoopla of the Pacific National Exhibition, year-round golf, or the determined tennis foursome who mop up yesterday's rain pools on cement courts with last weekend's newspapers, the way they have the winter through. Some feel it as they tack into the salt breeze from the Gulf of Georgia, beyond miles of bathers beached in the July sun. To others it is the scent of juniper and hemlock around a mountain cabin set in a quilt of Alpine flowers, or the city that lights up at their feet as the blue dusk thickens in a windcleared sky.

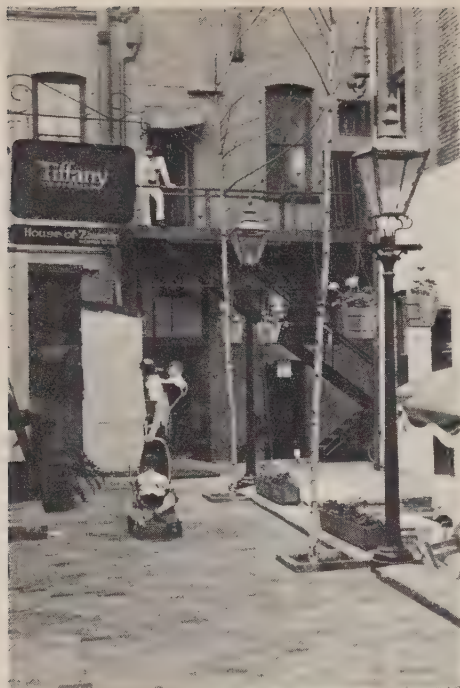
Vancouver is the early morning sound of shunting trains in bleak freight yards, when the light is spare and lamps still glow on the piers. The big grain ships in English Bay, just arrived from Europe and Asia, rattle up their anchors, then creep cautiously round fog-shrouded Prospect Point, their fog horns echoing from the cliffs of the Lion's Gate. The sun climbs over the far peaks as crosstides of students begin to flow to the citadels of learning, west to the University of British Columbia at Point Grey, or east to Simon Fraser on Burnaby's furthest hilltop. But greater tides flow inward as snakelines of cars writhing over the

multiple bridges bring people to the sleek office towers, the squat department stores, the late Victorian public buildings for another day. The downtown traffic sounds mingle with the thin high notes of oriental music that betokens solid blocks of Chinese restaurants and cabarets.

Vancouver is also a place of vivid contrast, where the clamour of the docks plays counterpoint to the tranquillity of Stanley Park; where a man can walk in January without a hat and swinging a furred umbrella; where you can ride a gondola to ski in the morning half a mile above the main streets and descend the same afternoon to skim over the waves on skis of another kind.

When the day is done and light begins to fade, the same human tide drifts homeward over the bridges. But not for long. The flow returns downtown in the gathering dark as patrons stream toward the blaze of lights marking a ballet, a symphony, a sports arena or movies, or are drawn by the sounds of folk music and go-go dancing rising from some dim cellar.

When the full ebb sets in at last and the moon rises over the Fraser's gorges its light will dance in the shimmering waters, slanting down on the great cement elevators, the white beaches, the log booms by the sawmills, picking out even the cans which bob in the refuse between the wharves. Perhaps it will also shine on Marine Drive, glancing on the modest bronze plaques to Master Simon Fraser and Captain George Vancouver, intrepid explorers of a bygone age, their names enshrined in the geography of a city and a nation.



Gastown, established in 1867, was the original site around which the city of Vancouver grew. Today this colourful old area boasts new life. Ancient buildings have been restored to house antique shops, art galleries, boutiques and restaurants. It's a casual place, rich in reminders of the past.

VANCOUVER '73

The Canadian Dental Association's 1973 national convention will be held in Vancouver, October 14-17.

A beautiful, exciting host city, an interesting, informative scientific program, and a social program that is varied and stimulating — all these factors combine to ensure that this year's convention will be the best ever.

An impressive lineup of speakers will share the results of current research and discuss practical and theoretical issues relating to the modern practice of dentistry. In addition, a comprehensive slate of workshops, table clinics and new films are planned to complement the formal program. And, as a finishing touch, the social program is geared to satisfy an entire gamut of tastes and interests in leisure time activities.

In this special "Convention News" section of the Journal you will find a complete convention program, a listing of exhibitors and a floor plan of the exhibit area, plus news of a few highlights of the program. If you haven't yet filled in your registration form, do it today. Come to Vancouver! That's where the action will be this October.

**Pre-registration closes August 31.
Register Now!**



N. Levine

The Nitobe Memorial Gardens, located on the campus of the University of British Columbia, feature a rock garden and a landscape tea garden.



Lecture on the development of occlusion

The development of occlusion from birth to age 12 will be the topic of a lecture by Dr. N. Levine. This presentation, scheduled for Monday afternoon, October 15, will deal with normal and abnormal development, as well as treatment techniques of interest to the general practitioner.

Dr. Levine is presently an associate in dentistry in the Department of Paedodontics at the University of Toronto, and dental consultant to the Metropolitan Toronto Association for Retarded Children and Protestant Children's Home. He is a member of the American and Canadian Academies of Paedodontics and the American Academy of Dentistry for the Handicapped. He has written several articles in the area of paedodontics and delivered many lectures.

*Convention News
continues on page 521*

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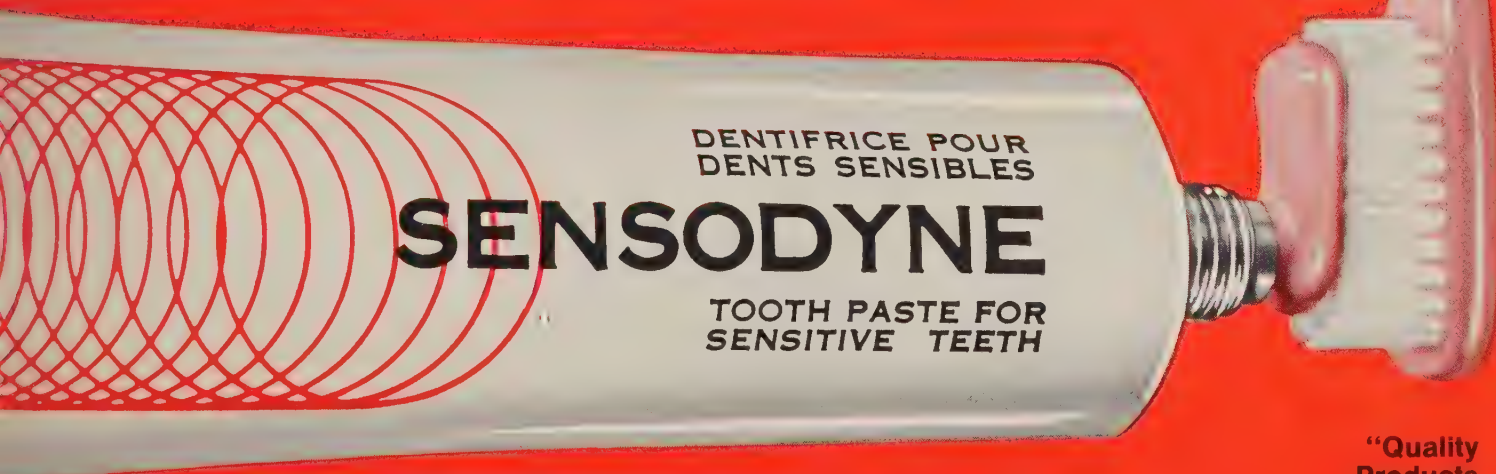
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- 8 Fine Arts Dental Labs.
- 9 Ticonium Company
- 10 Proctor & Gamble Co. of Can. Ltd.
- 11 Proctor & Gamble Co. of Can. Ltd.
- 12 Ash Temple Ltd.
- 13 Northwest Dental Laboratories Ltd.
- 14 PG Professional Leasing Ltd.
- 15 PG Professional Administrative Services Ltd.
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CDA CONGRES NATIONAL ADC VANCOUVER OCT. 14-17, 1973

CONDENSED PROGRAM

MONDAY — OCTOBER 15

MORNING — 9:30 — 11:30 a.m.

Room

1. Table Clinics 22
Columbia
2. Grieve Memorial Lecture
J. E. Harris
"Solving Some Riddles of the
New Kingdom Royal Mummies."
Wadding-
ton
3. J. Fiset, Montreal (In French)
Quelques idées nouvelles pour
sauver quelques dernières dents
extrêmement faibles.
Social
Suite East
4. P. Desautels, Montreal
Restoration of fractured incisal
angles by use of etching technique.
Social
Suite West
5. Panel
Vancouver
Island

- D. C. Way, Toronto
- O. F. Wright, Vancouver
- W. E. Jackson, Toronto
- D. Smith, Toronto
- "Your Security" Investments
and Insurance.
- Scientific Movie Program

AFTERNOON — 2:00 — 4:30 p.m.

1. Capsule Clinics
C.H.M. Williams, Toronto
Natural healing and natural
recontouring in Periodontal
Therapy.
Social
Suite East
- B. Pettapiece, Vancouver
Ramus Midline Rail Implants
- C. W. Ferguson, Hope
Occlusion — "A Plea for

TUESDAY — OCTOBER 16

MORNING — 9:30 — 11:30 a.m.

Room

1. Table Clinics 21
Columbia
2. K. J. Olson, Michigan
(All Day)
Teeth are Emotional
Pacific
Room
3. H. M. Worth, Vancouver
Mechanisms of disease of the
jaws and their radiologic
co-relation.
Wadding-
ton
4. A. E. Swanson, Vancouver
Sponsored by Royal College
of Dentists of Canada.
Medical Emergencies in the
Dental Office.
Vancouver
Island
5. Panel
J. P. Lussier, Montreal
Moderator
Social
Suite West

- A. Reid, Winnipeg
- D. Lambert, Vancouver
- S. Wah Leung, Vancouver
- M. Lipkind, Calgary
- Is the New Graduate just like the
rest of us? Does Dental Educa-
tion really change anything?
- Forensic Dentistry
1. G. Swann, Calgary
L'Etrouleur — The Wayne
Boden Murders.
Hyatt
House
2. J. D. Purves, Toronto
The Unknown Body.
- Scientific Movie Program

AFTERNOON — 2:00 — 4:30 p.m.

WEDNESDAY — OCTOBER 17

MORNING — 9:30 — 11:30 a.m.

Room

1. N. Guichet, California
(All Day)
Modern Concepts of Occlusion
Pacific
Room
2. D. E. Grenoble, California
R. Voss, California
Vitreous Carbon Implants
Vancouver
Island
3. H. L. Gelfant, Vancouver
A Fresh Approach to Crown
and Bridge procedures.
Wadding-
ton
4. R. I. Yorsh, Vancouver
Hypnosis and Suggestion
in Nitrous Oxide-Oxygen
Psycho-sedation.
Social
Suite West
5. Scientific Movie Program
Board
Room

AFTERNOON — 2:00 — 4:30 p.m.

1. Capsule Clinics
B. Hord, Toronto
Social
Suite East
- Bread and Butter Dentistry
J. L. Kleinmann, Vancouver
Mucoginival Techniques in
Periodontal Therapy.
- A. F. Stamey, Washington
"Rational for the Panto-
graphic Registration"
2. N. Guichet, California
(All Day)
Modern Concepts of Occlusion.
Pacific
Room
3. E. W. Banister, Vancouver
Physical Fitness — The Heart
Attack, a Dentist's Hazard

2. Panel
G. S. Beagrie, Toronto Moderator
C.H.M. Williams, Toronto Peridontist
R. D. Haryett, Edmonton Orthodontist
F. W. Lovely, Halifax Oral Surgeon
"The Problem of the Third Molar."
3. J. Fiset, Montreal
Different concepts utilized in the treatment of terminal dentitions.
4. P. Desautels, Montreal (In French)
Evaluation clinique d'une technique de restauration de fracture incisive.
5. N. Levine, Toronto
The development of occlusion from birth to adolescence.
6. A. Van Hassel, Seattle
Pulp responses to heat and vaso-constrictors.
7. Peter Banks
Acupuncture

Waddington Room

Endodontic procedures which make the difference between success and failure.
Y. G. Malkin, Vancouver
"Criteria for Early Orthodontic Group."
F. Musaph, Vancouver
"Panoramic Radiography."
2. K. J. Olson, Michigan (All Day)
3. Panel
B. Hord, Toronto Moderator
Col. D. H. Protheroe, Halifax
D. G. Barrett, Charlottetown
W. B. Hudgins, Alliston
M. H. Lewis, Regina
D. E. McFarlane, Vancouver
A Symposium on systems of dental care delivery - Utilization of auxiliaries with expanded duties.
4. B. J. Levin, Toronto
What is in a Face? (Orthodontics)
5. J. G. Silver, Vancouver
D. Donaldson, Vancouver
The effects of electro-surgical retraction on the gingival margins and sulci.
6. Scientific Movie Program

Pacific Room

Columbia Room

Waddington

Social Suite West

Board Room

TICKETS AND VOUCHERS TO THE LISTED EVENTS ARE NOW AVAILABLE TO PRE-REGISTERED DELEGATES. FOR RESERVATION SIMPLY FORWARD A NOTE OR THIS FORM TO THE CDA CONVENTION BUREAU. ATTACH IT TO YOUR COMPLETED REGISTRATION FORM IF YOU ARE NOT ALREADY PRE-REGISTERED. PLEASE DO NOT FORGET TO ENCLOSE YOUR CHEQUE IN PAYMENT OF TICKETS ORDERED, AND IF APPLICABLE, REGISTRATION. MARK NUMBER OF TICKETS DESIRED BESIDE DESCRIPTION(S).

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MAIL TO CDA CONVENTION BUREAU
234 St. George Street, Toronto, Ontario, Canada, M5R 2P2.

SUNDAY EVENING, OCTOBER 14
VANCOUVER OKTOBERFEST

Open without charge to all registered convention participants. Formal opening ceremony is at 7:30 p.m. in the British Room, Hotel Vancouver. The Oktoberfest Party begins at 8 p.m. in the Pacific Ballroom and Vancouver Island Room.

MONDAY, OCTOBER 15

- 1. Architectural Tour - Ticket Price \$6.00
Buses leave Burrard Street entrance of Hotel Vancouver at 9 a.m. Ticket price includes refreshments en route.
- 2. Complimentary Luncheon - Hyatt House
Each fully registered dentist attending the convention will receive vouchers without charge to exchange for luncheons on the convention level of the Hyatt Regency Hotel, on Monday and Tuesday, 11:30 a.m. - 2:30 p.m. Extra tickets for friends, employees, spouse, etc. \$4.00.
- 3. Playhouse Theatre Premiere - Ticket Price \$5.00
"Julius Caesar"

TUESDAY, OCTOBER 16

- 1. Lunch with Chief Dan George - Hyatt House
Plaza Ballroom - Ticket Price \$6.00.
Displays and demonstrations begin at 11:00 a.m. followed by a reception and luncheon of authentic Indian fare.
- 2. Complimentary Luncheon - Hyatt House
Extra tickets \$4.00.
Same description as above.
- 3. President's Party - Ticket Price \$15.00
Per Couple \$30.00
This highlight event will be held in the British Columbia Ballroom of the Hotel Vancouver. It will be a very exciting evening, and talked about for years to come. Dress optional. Don't miss it!

WEDNESDAY, OCTOBER 17

- 1. Installation Luncheon in the British Columbia Ballroom at Hotel Vancouver.
This event is being sponsored by the Government of British Columbia. Vouchers are available to fully registered delegates on a first come, first served basis. Please indicate if spouse will accompany you to this event.

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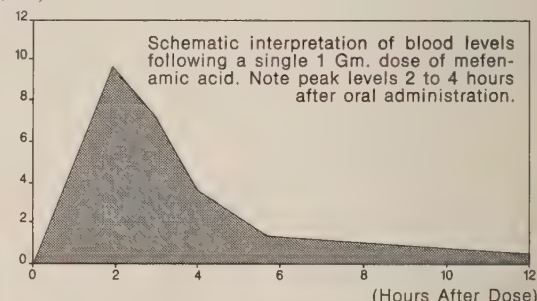
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Clinical experience has shown that side effects with PONSAN are few and mild at the recommended dosage, but are readily detected and easily controlled when resulting from high dosage or long-term use.

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*References available upon request.

Dosage and Administration: Adults and adolescents over 14 years of age — 500 mg. (2 capsules) as an initial dose, followed by 250 mg. (1 capsule) every six hours as needed. The major portion of clinical experience with PONSAN has varied from single doses to 84 days of therapy.

Contraindications: Intestinal ulceration; diarrhea as a result of taking the drug; safe use in pregnancy not established; in children under 14 years of age until pediatric dose has been established.

Precautions: Administer with caution to patients with abnormal renal function, inflammatory diseases of the gastrointestinal tract, or those on anticoagulant therapy.

Discontinue if diarrhea or rash occurs.
Side effects: Mild and infrequent at doses up to 1500 mg. per day; dose-related, being more frequent with higher doses. Most frequently reported: drowsiness, dizziness, nervousness, nausea, diarrhea, G.I. discomfort, vomiting. For detailed information on Precautions and Side Effects see product brochure available on request.

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J. E. Harris

James Harris is Grieve lecturer

James E. Harris, well known researcher and author, will deliver the Grieve Memorial lecture at the 1973 CDA convention. His anthropological presentation, "Solving Some Riddles of the New Kingdom Royal Mummies," is scheduled for Monday morning, October 15.

Dr. Harris is presently professor of dentistry and chairman of the Department of Orthodontics at the University of Michigan. His research interests, as shown by a long list of significant contributions to the dental profession and to anthropology, include the inheritance of malocclusion in families, growth and development in severely retarded children, and the craniofacial variation in the Nubian, ancient and modern. His most recent research deals with genetic factors in craniofacial growth and development.

Dr. Harris holds Masters' degrees in orthodontics and human genetics. He was awarded the John Harvey Kellogg Research Scholarship in 1961 and the National Institutes of Health Career Development Award in 1964.

A member of the University of Michigan School of Dentistry for several years, Dr. Harris is also involved in many professional and honorary societies; these include the ADA, the American Association of Orthodontists and the American Association of Physical Anthropology.

Does dental education really change anything

During the past three years, the Department of National Health and Welfare has funded, through the Association of Canadian Faculties of Dentistry and the University of Manitoba, a project designed to determine the attitudes of

current dental students toward their education, their use of auxiliaries, and their career expectations following graduation. A profile of the Canadian graduate of the '70's has emerged from this study. This profile will be examined from various points of view in a panel discussion entitled "Is the New Graduate Just Like the Rest of Us?"

Panelists will discuss the possibility of changes in the delivery of dental health services brought about by graduates of the '70's. Dr. Jean Paul Lussier, Dean of the Faculty of Dental Medicine, University of Montreal will act as moderator of the panel. A sociologist's point of view will be presented by Mr. Angus Reid, the author of many papers in the field of dental education. Mr. Reid is expected to receive his doctorate prior to the 1973 CDA National Convention. Dr. Dorsen Lambert, a 1972 University of British Columbia dental graduate now in practice in Vancouver, will present a student's view. Dr. S. Wah Leung, Dean of the Faculty of Dentistry at UBC, will present a dean's view. Dr. Max Lipkind, in practice in Calgary since 1945, will present a practitioner's view. Each of the four panelists will present a 15 to 20 minute prepared "view". A very active discussion and question period is anticipated.

Hypnosis in dentistry

Dr. Ralph L. Yorsh of Vancouver will present a group clinic on hypnosis, entitled "Hypnosis and Suggestion in Nitrous Oxide-Oxygen Psychosedation." The clinic will take place on Wednesday, October 17.

Dr. Yorsh brings to his presentation 14 years of experience in clinics, for



R. L. Yorsh

beginner and advanced dentists and physicians dealing with hypnosis, behaviour modification and patient management.

As a practising dentist in Vancouver, Dr. Yorsh is also a member of many professional and scientific societies. These include the Vancouver and District Dental Society, the Periodontic Study Club, the Biological Photographers Society and the Canadian Society for Clinical Hypnosis (Vancouver Branch), of which he is president.

His interests are many and varied — man in society, calligraphy, world travel and hypnosis.

REGISTER NOW!

Pre-registration allows the organizers of the National Convention to plan ahead. It gives you, the delegate, first choice on accommodations and limited functions.

The \$45 registration fee includes admission to all scientific sessions, three luncheons and all exhibits.

For your convenience, a registration form is included in the back of this issue. Please fill it out and return it today. Pre-registration closes August 31!

Vancouver's museum-planetarium complex, opened in 1968, is one of the world's most modern. For many delegates to the CDA National Convention the planetarium will be a must stop on their sightseeing tour of the city.



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Convention program for hygienists highlights continuing education

"Continuing Education: Directions '73". That's the theme for the 1973 annual convention of the Canadian Dental Hygienists Association to be held in Vancouver, October 14-17.

This year's convention will mark the 10th anniversary of the CDHA and there is every indication it will be the most successful ever held. The program features outstanding speakers and panelists from across Canada and the United States.

The hygienists have chosen the Hyatt Regency Hotel, Vancouver's newest and largest, as their convention headquarters. Registration will begin at noon on Sunday, October 14. All delegates to the CDHA convention are invited to attend the official opening ceremonies and the "Oktoberfest" launching the Canadian Dental Association's convention at the Hotel Vancouver on Sunday evening.

At 9:30 Monday morning, the hygienists' program will get underway with the opening ceremonies, followed by the address of keynote speaker, Mrs. Margaret Neylan, director of continuing nursing education and associate professor of nursing at the University of British Columbia.

At 10:45 a panel discussion on "Recognizing the Need" will be presented. Mrs. Neylan is moderator for this session and the panelists are: Dr. J. F. McCreary, health sciences coordinator, UBC; Dr. George Beagrie, chairman of the CDA Council on Education's Committee on Continuing Education and Assistant Director of Postgraduate Studies, University of Toronto; Dr. Gerald Muddock, consultant, dental auxiliary education, University of Washington; and Mrs. Sharon French, consultant in dental hygiene, Department of National Health and Welfare.

A special luncheon on Monday will mark the celebration of the Canadian Dental Hygienists Association's 10th birthday and will be an occasion honouring past presidents and 10 year members of the association.

The afternoon program will kick off with a dialogue on the topic of "Choice or Necessity". Participants are Mrs. Joan Voris, supervisor of the program of dental hygiene and an assistant professor at UBC, and Mrs. Lona Jacobs, coordinator of dental auxiliary education at the University of Washington. This session will be followed by a presentation entitled "Expanded Functions: Now What?" given by Mrs. Martha Fales, director of the University of Washington's School of Dental Hygiene.

Monday evening has been left free to allow delegates to plan their class or school reunions.

On Tuesday, October 16, the CDHA will join the Canadian Dental Nurses and Assistants Association for a combined series of table clinics and presentations by speakers. The intriguing lineup of titles for the table clinics ensure that every specialized field of interest will be catered to. They include: "Par for the Course", a collection of preventive aids resources, presented by Sue Lighthall and Marion Alexander of the British Columbia Dental Hygienists Association; "Sure Cure for Hangovers", presented by members of the Vancouver Island Dental Hygiene Society; "The Dental Hygienist in Oral Cancer Detection", presented by Heather Hagerman and Kerstin Andersson of the BC hygienists' association; "A New Approach to Necking", presented by senior dental hygiene students from the University of Washington; "Pit and Fissure Sealant Application", presented by senior dental hygiene students from the University of British Columbia; "The Dental Hygienist in full mouth restoration" presented by Suzanne MacLellan of the Alberta Dental Hygienists Association; "Placement Services" presented by Pat Johnson of the Ontario Dental Hygienists Association and Carol Kline of the BCDHA; and, "The Force Behind the Smile" presented by Melanie Mahn, Gail Ellis and Jane Costigane of the ODHA.

The table clinics will be followed by a drug seminar featuring Sergeant Bill Chisholm of the Sannich Police Department.

Tuesday's lunch will be held in the ballroom of the Hotel Georgia. Guest speaker will be Bill Mussell, a sociologist, who will address delegates on "The Health Professional in the Community."

At 2:00 pm delegates will sit in on a panel sponsored by the Canadian Dental Association at the Hotel Vancouver. This panel is "A Symposium on Systems of Dental Care delivery: Utilization of Auxiliaries with Expanded Duties." Dr. Bruce Hord of Toronto will act as moderator for the session. Panelists are: Col. D. H. Protheroe of Halifax; Dr. D. G. Barrett, Charlottetown; Dr. W. B. Hudgins, Alliston; Dr. M. H. Lewis of Regina; and Dr. D. E. McFarlane of Vancouver.

After the panel discussion delegates will return to the Hyatt Regency to visit manufacturer's exhibits. A wine and cheese party is then scheduled for 5:30 pm.

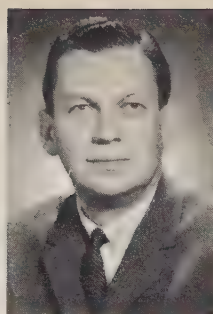
The program for Wednesday is headed up by a panel discussion on the subject of organizing and implementing continuing education programs. Mrs. Pat Johnson, past president of both the Ontario and Canadian Dental Hygienists Associations and CDHA liaison to the Council on Health Care, is the moderator. Panelists are: Dr. S. Wah Leung, Dean of the UBC Faculty of Dentistry; Mrs. Jean Fox, president of the American Dental Hygienists Association; Dr. J. D. McLean, Dean of the Faculty of Dentistry at Dalhousie University; Miss Sheila Hoople and Miss Norma Wells, both instructors at the School of Dental Hygiene, University of Washington.

This panel will be followed by a "Reactor Session" featuring speakers Mrs. Margaret MacLean, director of the University of Alberta's School of Dental Hygiene and Mrs. Linda Zambolin, an instructor at Dalhousie's School of Dental Hygiene and immediate past president of the CDHA.

A "Lunch and Learn" session will be arranged for delegates at noon Wednesday. This session will afford delegates an opportunity to attend a mini continuing education course. Group leaders at each table will guide round table discussions on a variety of



W. E. Jackson



D. S. Smith



D. C. Way

Investments and insurance

A panel of CDA experts will address convention delegates on Monday morning, October 15, on investments and insurance for Canadian dentists. "Your Security" will be the theme of this presentation, scheduled for 9:30 a.m. in the Vancouver Island Room of Hotel Vancouver. Panelists will be on hand throughout the convention, prominently located in the convention registration area.

Dr. David C. Way, of London, Ontario is Chairman of CDA's Council on Insurance and Investment and will act as moderator of the panel. Dr.

Orville Wright of Vancouver, a Council member, will be on the panel, as will W. E. (Gene) Jackson, chief executive of Canadian Dental Service Plans Incorporated. The fourth member of this panel of experts is Mr. Donald Smith of the Royal Trust Company. Mr. Smith is closely associated with the management of the assets and investments of the Canadian Dental Association Retirement Savings Plan.

Planned also is the premiere of a new film on various plans available to Canadian dentists and recommended by CDA. A discussion period will follow, and it is a certainty that many matters important to "Your Security" will be dealt with.

Hygienists' program . . .

current topics of interest to dental hygienists. Subjects scheduled for discussion include: dental photography; the dental hygienist in restorative dentistry; health care at the national level; increased utilization of the dental hygienist; fissure sealants; when to refer to a periodontist; what motivates and changes behaviour; implementing plaque control in private practice; innovative ideas in public health; free dental clinics; and utilization of a dental hygienist in a group practice.

And, finally, wrapping up the hygienists' convention on Wednesday afternoon, an open session will be held where CDHA members from the various provinces will be able to exchange views and experiences.

As an added attraction, the planning committee for the dental hygienists' convention has arranged a number of short three or four day post convention tours to San Francisco, Las Vegas or Los Angeles for delegates interested in combining their vacation with the annual convention. A holiday in Hawaii has also been made available at reduced rates.

Canadian Academy of Periodontology/ Académie Canadienne de Périodontologie

Vancouver Hotel, Vancouver, BC,
October 12 and 13, 1973

Friday, Oct 12 "Periodontics Northwest" Program
9:00 a.m. Brief welcome, President Claude Durand
Dr. W. J. Ammons, Jr.,
Chairman, Periodontics, University of Washington
Dr. Stan W. Sapkos
Chairman, Periodontics, University of Alberta
Noon to 2.30 p.m. **Annual business meeting and luncheon**
Dr. Walter B. Hall
Professor and Chairman, Periodontics, University of the Pacific
Dr. Neil Basaraba,
Periodontics, UBC and private practice
Dr. Josh Kleinman,
Periodontics, UBC and private practice
Friday evening free

Saturday, Oct 13

9:00 a.m. Dr. A.L. Ogilvie
Professor, Periodontics, University of Washington
President, Washington Society of Periodontists
Dr. John Silver,
Periodontics, UBC
Dr. Herbert Selipsky
Periodontics, University of Washington
Noon to 1:30 p.m. **Luncheon, Hotel Vancouver**
Dr. T. Arthur Barber
Periodontist, Victoria, BC.
Dr. Edward Chesko,
Periodontics, UBC and private practice
Dr. Roy Thordarson,
Periodontics, UBC and private practice
Evening, 7:00 p.m. **Ten course Chinese Banquet (informal)**
at Marco Polo Restaurant, in Vancouver's famed Chinatown.



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CANADIAN ACADEMY OF PERIODONTOLOGY



ACADEMIE CANADIENNE DE PERIODONTOLOGIE

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ÉTÉ 1973

Editor's Notes

The editorial board of the Bulletin of the Canadian Academy of Periodontology welcomes the opportunity to publish this issue as part of the Journal. It is hoped that this association will further enhance the communication and understanding between the various dental disciplines. Only through the continuous exchange of ideas can we hope to provide for optimum dental care to the public.

The scientific material has been selected for the general practitioner with particular emphasis on basic diagnosis, and a comprehension of the many faceted periodontal lesion. While covering different subjects, all have a common denominator in their periodontal implications and applications.

lesion. First, one of the most common problems is the acceptance of "pink looking tissue" as synonymous with health, while in fact, these tissues may be concealing a very destructive osseous lesion. It should be understood that some advanced periodontal lesions may regain a fibrotic appearance while the osseous support slowly degenerates. Secondly, the diagnosis of the furcation involvements has a long but poorly understood history in dentistry. Pathological invasion of a furca may go unnoticed because of reliance on radiographic evidence only. The incipient furcation defect can be easily detected by proper application of the explorer and periodontal probe, and if diagnosed in time rather conservative therapy can insure an excellent prognosis. A third common problem is the acceptability of recession by some members of our profession as a normal ageing process. In fact we know that it is a pathological entity which can be prevented by early diagnosis and predictably corrected by mucogingival therapy. Last but not least, many practitioners are lulled into the habit of determining periodontal health and disease by the existence or absence of tooth mobility. However, disease detected in this manner usually reflects a rather advanced state of destruction of the supporting structures and thus limits the predictability of definitive treatment.

With care and diligence we believe most periodontal conditions can be prevented; failing this, if diagnosed early a good prognosis of the affected areas can be assured with treatment.

E.M.H.
M.S.

Editorial:

EARLY DIAGNOSIS AND THE PERIODONTAL PATIENT

We would be remiss in our responsibility were we not to take advantage of this opportunity to preach gospel . . . The importance of an early diagnosis in the management of the periodontal patient.

With the continual improvement in the predictability of the more recent periodontal surgical procedures, one could offer most patients an ability to eradicate the periodontal lesion with a greater probability in preserving the natural dentition. Successful management of the periodontal patient, however, is most dependent upon commencing preventive and interceptive procedures before the periodontitis

has destroyed the major portion of the attachment apparatus.

A detailed discussion of the various diagnostic techniques is not revelant at this time. However, it is the responsibility of the dental practitioner to adequately determine the status of the supporting structures. This task can be done quite accurately by sulcular probing and radiographically detecting the relative changes in the topography of the alveolus. Evaluation of furcation involvements, determination of mobility and occlusal discrepancies are of course a further aid in ascertaining the total periodontal picture.

Too frequently the periodontal status of the patient is not accurately diagnosed until the latter stages of destruction; this greatly limits the prognosis of the overall case. In this regard there are a number of situations which occasionally deceive the practitioner by masking the periodontal

The management of furcation involvement

Marvin J. Werbitt,
BSc, DDS, MScD*

The area between the inter-radicular bone and tooth structure (cementum) of multirooted teeth is referred to as the furcation. Teeth, such as mandibular molars and some maxillary first premolars, with two roots have bifurcations. Trifurcation refers to teeth with three roots such as maxillary molars.

The degree of involvement, ie, the amount of attachment apparatus destruction in the furcation area, may be described using various gradations. Grade 1 refers to the incipient furca, characterized by early breakdown and the ability to insert a probe horizontally between the tooth and the bone approximately one millimeter (Fig 1). A Grade II furcation involves more destruction and is probable in a horizontal manner for approximately two or three millimeters (Fig 2). The Grade III furcation refers to complete destruction of the inter-radicular attachment apparatus and an open communication between all the furcations of the tooth (Fig 3).

There are numerous possible etiologies of furcation lesions. These include traumatic occlusion, bacterial disease, pulpal and systemic diseases, as well as combinations of the above. A discussion of these etiologic factors are not within the scope of this paper. Assuming an accurate diagnosis, treatment procedures to be discussed will be directed towards problems that have not responded to endodontic, occlusal nor systemic therapy.

The treatment of furcations in multirooted teeth has been the nemesis of the dental profession for many years. The decision whether or not to treat these lesions, as well as the mode of treatment, appears to be very subjective. Therapy may include simple curettage, odontoplasty, complete "opening up" of the furcation, osseous grafting, root amputation or even exodontia. A choice of any of these procedures should depend on the importance of the tooth, the patient's "resistance factor", degree of involvement, age, level of plaque control, etc.

Before proceeding with any of these techniques, one must be sure that the therapy is justifiable. The tooth in question must be important to the quadrant, to the arch, and to the entire dentition.

1. Curettage

Many clinicians treat furcation involvement by simple curettage, claiming success with this technique. It should be pointed out, however, that this form of therapy is not without its drawbacks. A furca is difficult enough for a dentist to maintain with his curettes, a task which is almost impossible for a patient with dental floss and a tooth brush. The furca acts as a trap for bacterial plaque which is not amenable to cleansing by routine home care. Consequently the area may chronically deteriorate and/or develop an acute periodontal abscess. In either instance, the bony support of the tooth in question may be jeopardized as well as that of healthy adjacent teeth. This can be seen in maxillary molars where two of the three furcas open interproximally. For this reason careful consideration should be given before proceeding with this form of treatment.

II. Odontoplasty

The term refers to the removal of tooth structure in an attempt to cor-

rect furcation pathology. This technique is commonly used where contouring of the tooth will eliminate furcation involvement without impinging on the pulp, as in Grade 1 cases. By removing tooth structure until sound attachment apparatus is reached, the horizontal pocket is eliminated (Fig 4 and 5). With more advanced furcation involvement, the amount of tooth structure which would have to be removed to eliminate the defect would likely result in a pulp exposure.

III. Opening of the furcation

This technique was commonly employed in the past. It involves the removal of enough inter-radicular bone to completely open up the furcation area and allow the patient to remove plaque with pipe cleaners, stimulants, etc. Not only is there a great sacrifice of bony support with this technique but more important, the tooth is highly susceptible to root caries. Quite often these teeth are lost due to caries rather than periodontal disease.

IV. Osseous grafting

The correction of furcation defects may be accomplished by either contiguous grafting (swedging), (Fig 6, and 7) or free autogenous grafting. The latter may be either from intra-oral sites or from the marrow secured from the iliac crest (Fig 8 and 9). It should be noted that the success rate of furcation grafting is not as high as that for infrabony defects.

V. Root amputation and hemisection

Root amputation refers to the removal of a root without removal of the corresponding coronal portion of the tooth (Fig 10). Hemisection refers to the removal of both root and corresponding portion of the crown (Fig 11). In either case, endodontic therapy should precede sectioning. It is recommended that a pulpotomy or pulpectomy be performed prior to root removal instead of complete endodontic treatment. The rationale is that often furcas are difficult to diagnose clinically and only at the time of flap surgery can one visualize the furcations and related osseous problems about the tooth. The furca may not be the only determining factor in the

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Fig 1 Grade 1 (incipient) furca. Probe inserted approximately 1 mm.



Fig 2 Grade 11 furca. Probe entry is approximately 3 mm.

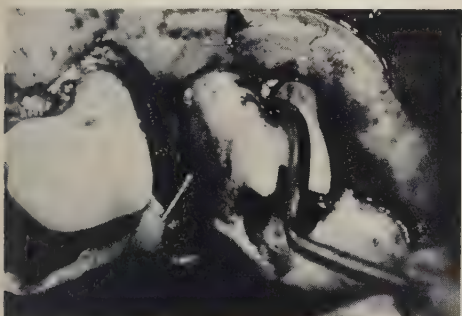


Fig 3 Grade 111 through and through furcation.



Fig 4 Probe inserted to show grade 1 buccal furca.

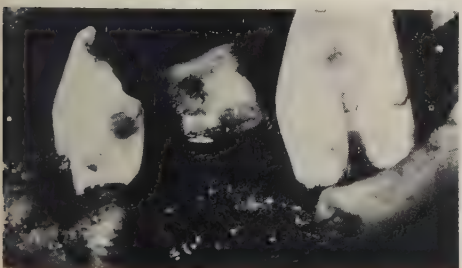


Fig 5 Odontoplasty to eliminate defect.



Fig 6 Buccal furca on maxillary molar.

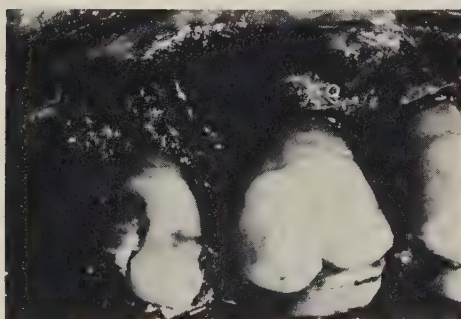


Fig 7 Buccal bone "swedged" into furcation defect.

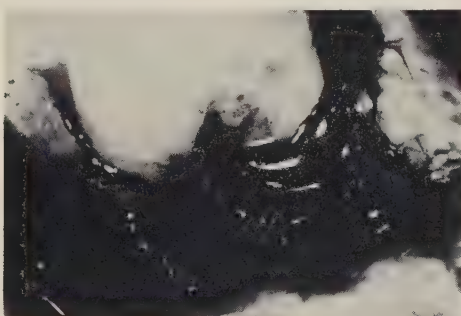


Fig 8 Distal furca of maxillary molar.

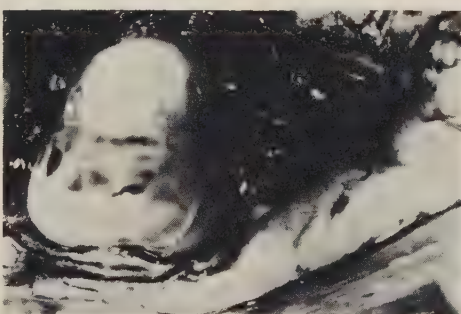


Fig 9 Iliac marrow grafted to distal furca.

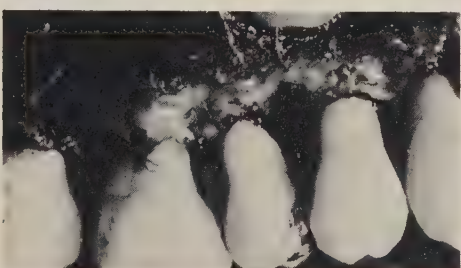


Fig 10 Root amputation of maxillary molar. Coronal portion of tooth still intact.

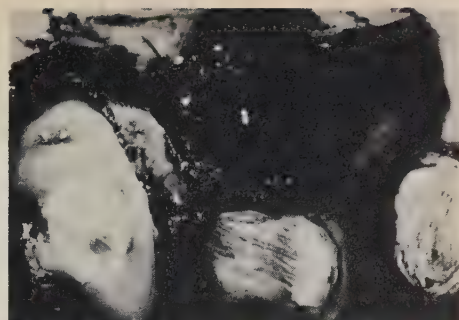


Fig 11 Palatal root and corresponding coronal tooth structure removed due to mesial and distal furcas.



Fig 12 Lingual furcation with intraosseous defect about distal root.



Fig 13 Removal of distal root due to furca and intraosseous defect.

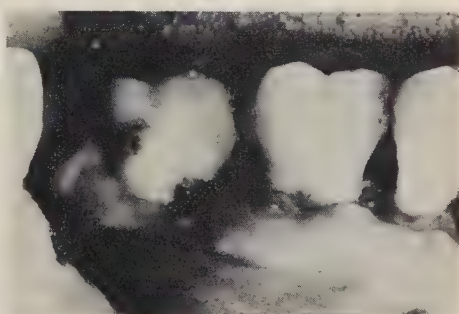


Fig 14 Note hyperplastic pulpal tissue growing out of pulp chamber.



Fig 15 Probe indicates deep intraosseous lesion between maxillary molars.

Pre-prosthetic considerations - aberrant frena and muscle attachments

Harry Skurnik, D.D.S.*

A systematic approach to treatment planning is essential to the success of any phase of dental therapy. Prosthodontists are keenly aware of the necessity of a precise history, a full mouth series of radiographs of both dentulous and edentulous regions, intra-oral examination and the mounting of casts in centric relation prior to the development of an adequate treatment plan. Such care will insure the individual patient of restorative procedures which will contribute to a state of health of the stomatognathic system in function and hopefully to some extent in parafunction.

The treatment plan itself should not be stilted in terms of the order with which the various disciplines are utilized. Furthermore the temporal initiation of a discipline will vary with each patient. The emergency situation

and initial therapy are universally accepted as the first phases in any treatment plan. Whether definitive selective grinding for mandibular repositioning, operative dentistry, the surgical phase of periodontics, orthodontic intervention or endodontic therapy is the next step in the treatment plan, will vary from patient to patient.

The well informed practitioner is well endowed with this insight. He is aware that he must establish whether centric relation is coincident with centric occlusion. He is further cognizant of those situations necessitating mandibular repositioning and those wherein a discrepancy between centric occlusion and terminal hinge position is acceptable.

Certainly one must be aware of the necessity of choosing abutments very carefully. These must have adequate attachment apparatus, be free of periodontal disease and be located in the dental arch in such a manner as to be adequately prepared with due regard to pulp protection, stress distribution and occlusal compatibility.

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(continued from page 532)

decision as to which root to keep. Osseous defects about furcated teeth often dictate which root is to be sacrificed (Fig 12, 13) as do osseous defects about non-furcated teeth (Fig 15).

Some authors recommend vital root amputation, claiming no pulpal symptoms. The response that they report is a hyperplastic pulpitis which is supposedly painless (Fig 14). However, the potential problems that one may incur perhaps warrant that endodontic therapy precede periodontal treatment to prevent problems for both patient and dentist.

Furcation defects in lower molars may sometimes be eliminated by splitting the tooth. Both roots are retained and separated orthodontically to ensure a good embrasure. They may then be restored to two "bicuspid".

When a clinician has the luxury of deciding which root/roots to keep,

those with more attachment apparatus and larger root canals are preferred, for obvious reasons.

VI. Extraction

Frequently the best mode of therapy is removal of all the roots. If the furcated tooth is so badly involved that none of the roots is salvageable, or if healthy teeth exist on either side of the tooth in question, then extraction may be the treatment of choice.

Summary

This paper describes and illustrates various methods of furcation management. Sound diagnosis and treatment planning are absolute prerequisites to the use of any of these techniques. The objective of furcation therapy is to arrest the disease process and create an environment conducive to good oral physiotherapy.

The edentulous areas are occasionally not given quite the same intense observation. Assuming that the contour and height of these areas are ideal, potentially traumatic position of frena and muscle attachments may be overlooked. Often their presence can be elicited only after meticulous examination by cheek and lip manipulation. Quite often their presence is associated with an inadequate zone of attached gingiva. The placement of a pontic in such an area will eventually cause irritation with its sequellae of acute inflammation and possible infection. Such aberrant frena or muscle attachments may occur in conjunction with abutment teeth as well. Placement of these potential hazards in an immune area can only be accomplished by surgical intervention. Often the displacement of the attached gingiva may be almost imperceptible. However, no matter how slight this displacement may be, surgery is always indicated.

Figure 1 illustrates a high muscle attachment on the second bicuspid saddle area. Furthermore, there is an associated lack of attached gingiva in the molar area. The survival of the planned four unit splint might be in danger without repositioning the aberrant muscle attachment and increasing the width of the attached gingiva around the molars and the edentulous area. Figure 2 demonstrates the post surgical results. The muscle attachment has been repositioned away from the saddle area and the band of attached gingiva has been increased around the molars and the saddle area. Figure 3 shows the planned four unit splint in place — its survival protected by being positioned on functional tissue. Figure 4 depicts a mobile first bicuspid carrying a cantilever cuspid pontic. Although there appears to be a wide band of attached gingiva around this tooth, it is in fact highly fibrotic, architecturally not physiologic and detached. This is associated with an aberrant buccal frenum which became responsible for the detachment of the functional gingiva around this tooth. The results of surgical correction is shown in Figure 5. Note the more apical position of the frenum and the healthy band of attached gingiva. Figure 6 illustrates the completed bridge.

Figure 7 is that of a 15 year old patient. Note: the high position of the

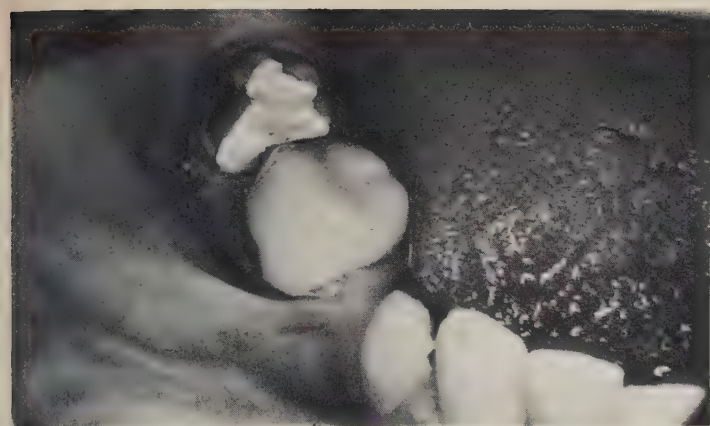


Fig 1 Aberrant muscle attachment located on the superior aspect of the saddle area.



Fig 2 Post surgical correction. Note the new position of the muscle attachment away from the location of a planned pontic.



Fig 3 The planned four unit splint in place.



Fig 4 The buccal frenum associated with detached functional gingiva on the buccal of the first bicuspid.

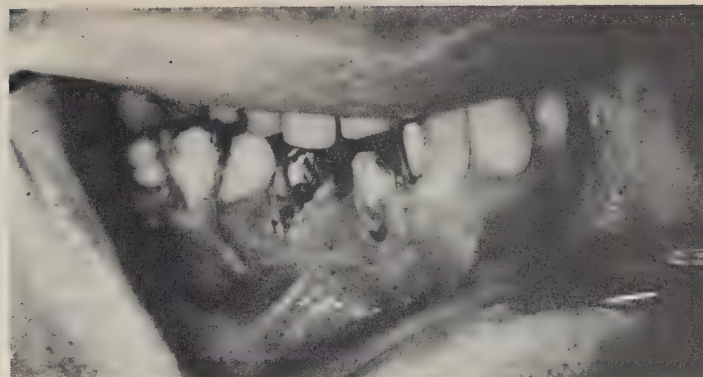


Fig 5 Surgical correction illustrating a physiologic band of attached gingiva and the placement of the frenum in a more apical position.

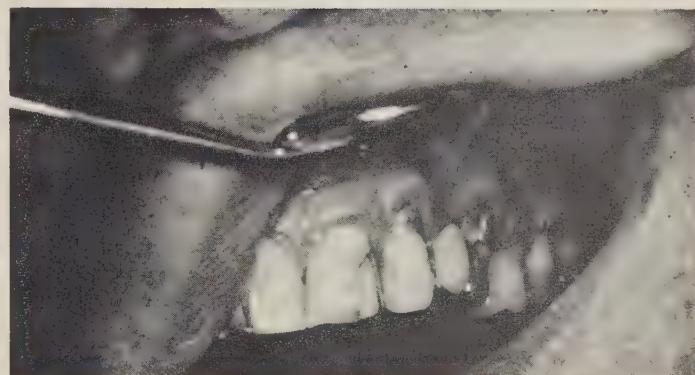


Fig 6 The planned restoration in place.



Fig 7 High labial frenum, narrow band of attached gingiva associated with inadequate gingival embrasures due to closely approximating roots in a 15 year old patient.

Endodontic and periodontic inter-relationships

B. Harvey Wiener,* BSc, DDS, MScD
Benjamin Sedlezky,** BSc, DDS

Fortunately, for both the patient and the dentist, the life of a mature tooth does not depend directly on the vitality of the pulp tissue. It depends rather, on the integrity and health of the attachment apparatus, which consists of the cementum of the tooth, the periodontal ligament and the adjacent cribiform plate of alveolar bone. Even though a tooth has received proper root canal therapy and is without vital tissue, it is not a "dead tooth". As long as a tooth possesses a healthy attachment apparatus it may serve as a functional and integral component of the dental arch. One must therefore assume that it is the healthy attachment apparatus which serves as the "vital organ" of the tooth after complete root formation.

With this basic concept set forth, one may now approach the various endodontic-periodontic inter-relationships, which exist, in a somewhat different perspective. It is easy to see that the basic biological problems of both areas are one and the same; that is, the attachment apparatus; therefore, it is only the approach in treatment and more importantly the initial diagnosis which vary. For example, the periodontist is concerned with treatment of the attachment apparatus at its margin while the endodontist treats damage in the periapical area. Thus, the only real difference lies in the anatomical environment of the existing lesions. However, the problem arises in diagnosis and in the ensuing treatment, particularly if these lesions should occur simultaneously or become confluent.

A. Problems of differential diagnosis

Many problems exist in combined lesions which present difficulty in diagnosis. One must assume that endodontic therapy will have no therapeutic value on lesions of periodontal origin and vice versa. Thus one must really depend upon clinical judgment and a battery of pulpal tests including the vitalometer, heat, cold percussion palpation and particularly cavity tests. In addition, the taking of radiographs will provide a suggestion as to the nature of the lesion.

If one obtains signs and symptoms of a necrotic pulpless tooth concomitant with a diseased attachment apparatus it is very likely that endodontic therapy will succeed in resolving the lesion. In cases where the lesion has extended to involve much of the "periodontal" attachment apparatus, combined periodontal therapy in the form of a flap procedure may be necessary to eliminate and eradicate the entire lesion.^{1,2}

If the tooth responds positively to the various pulp tests, root canal therapy will be of no therapeutic value in the resolution of a periodontal or periapical lesion *per se*. This treatment can only be of value if it will allow the periodontist to perform subsequent periapical curettage of a "periodontal" lesion. In this case, the treatment must be directed toward a diagnosis of non-endodontic involvement, namely periodontal disease in the form of a deep infra-bony pocket, and/or bifurcation involvement or occlusal traumatism.

A major problem in diagnosis deals with those lesions which are continuous from the gingival crevice to the apex and vice versa; that is, the fistulous tract draining through the gingival sulcus. There are situations in which a probe inserted into the gingival cuff will penetrate to the apical region or beyond. The patient may or

may not present symptomatology, mobility, exudation and/or a significant history. The critical question remains: Is the lesion gingival or pulpal? Again, pulp vitality tests will help provide the diagnosis. If pulp vitality tests are negative and the lesion is acute, endodontic therapy will probably suffice alone. If pulp tests are negative, but the lesion is chronic, consideration should be given to both periodontal and endodontic therapy. In the opinion of many, this treatment is optionally carried out simultaneously. If the damage appears within the regenerative potential of the remaining attachment apparatus the opportunity for a cure by this combined therapy is good. Otherwise the tooth is a candidate for extraction.³

Further complicating these lesions which have fistulous tracts draining through the gingival sulcus, are those lesions which in addition to the above have superimposed upon them, occlusal trauma and bifurcation or trifurcation involvements. The occlusal traumatic involvement is usually brought on by placement of a fixed restoration on a tooth with resulting destruction to the attachment apparatus in the periapical region and a sulcular draining fistula. In this case endodontic therapy would be of little

Pre-prosthetic considerations

continued from page 534

labial frenum and the narrow band of attached gingiva on the labial of the four incisors. Furthermore there are inadequate gingival embrasures due to closely approximating roots. The importance of meticulous plaque control for this situation cannot be overemphasized. The results of a marginal periodontitis for this patient might prove disastrous for these teeth.

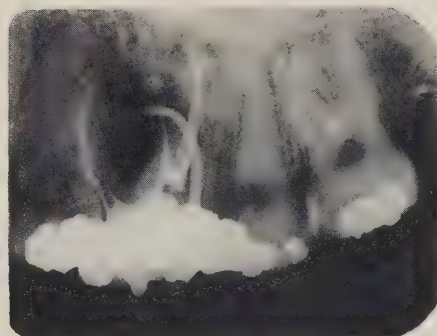
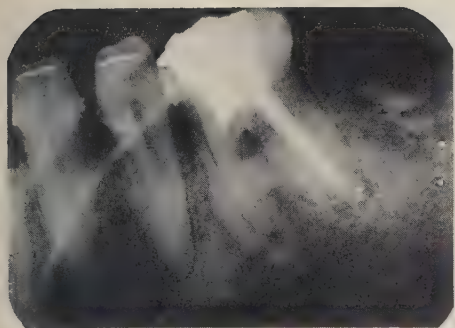
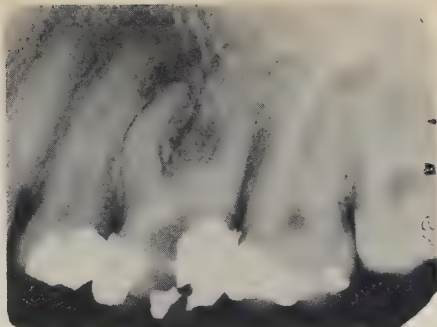
Summary

The importance of discovering aberrant frena or muscle attachments causing mobility of the attached gingiva has been stressed. These must be corrected surgically. Restorative procedures will otherwise fail. Some typical situations illustrating the above situations have been presented.

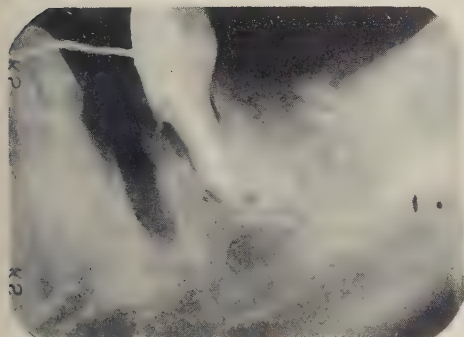
* Head, Department of Endodontics, Jewish General Hospital, Montreal; Lecturer, Department of Endodontics, Faculty of Dentistry, McGill University.

** Chairman, Department of Endodontics, Faculty of Dentistry, McGill University.

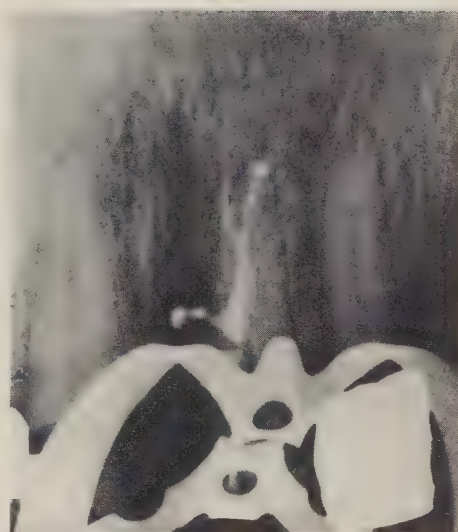
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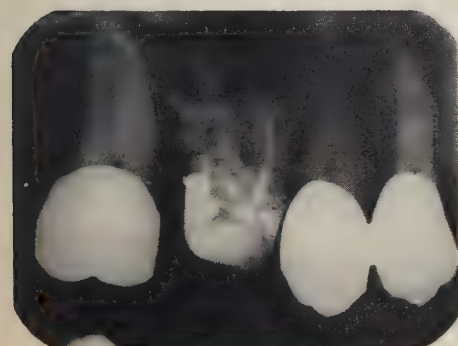
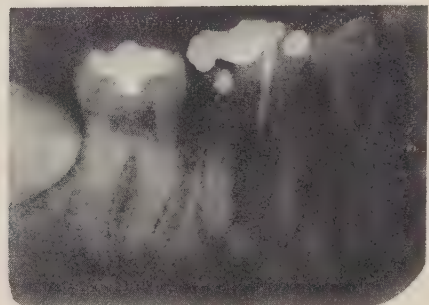
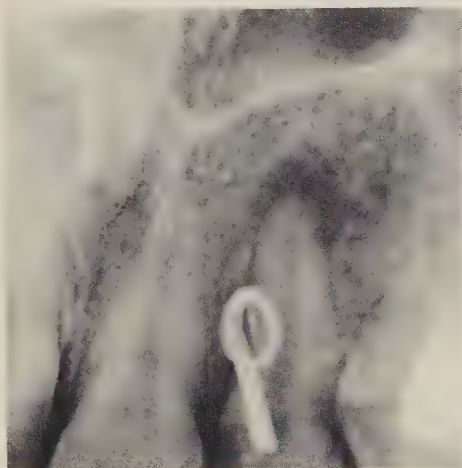
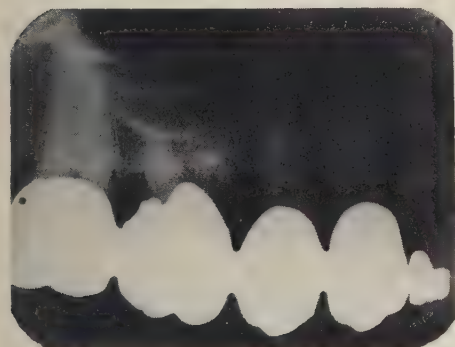
Endodontic therapy for misdiagnosed periodontal lesion.



Periodontal furca involvement. Endodontic therapy followed by hemisection and extraction of distal root.



Fistula of pulpal origin from large lateral canal at periodontal sulcus.



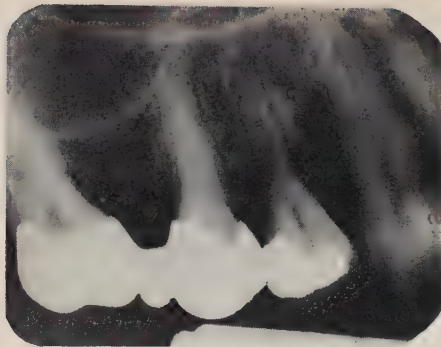
Periodontal furca involvement. Endodontic therapy followed by amputation of root.



Fistula of pulpal origin, originating from a lateral canal near periodontal sulcus.



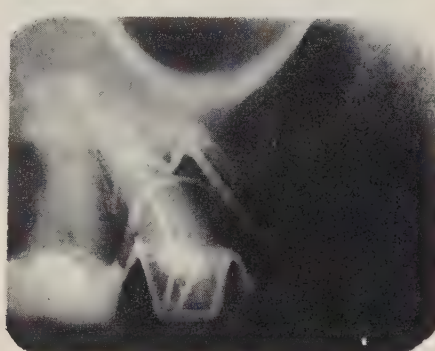
Fistula of pulpal origin causing bifurcation lesion and fistula. Endodontic therapy only with resultant healing of lesion.



Periodontal treatment causing or caused by pulpal necrosis with lateral canal through bifurcation area.



Fistula attributed to endodontic periapical lesion but correctly diagnosed as of periodontal origin from DGI pocket.



value. This lesion has been brought about by the pressure of occlusal traumatism on an incipient infra-bony pocket. It is usually characterized by rapid development along the length of the periodontal ligament and development of an expanding lesion in the periapical space. Teeth of this type require periodontal therapy or combined therapy with the reduction of the occlusion to restore health.^{4, 5}

In addition to combined lesions, there are other problems in diagnosis such as those dealing with the differentiation of acute or sub-acute periapical abscesses from a periodontal abscess. Both conditions generally produce palpable swelling and sensitivity to percussion due to the effects of the inflammatory process on the attachment apparatus. The swelling of a periapical abscess is usually located in the muco-buccal fold, while that of a periodontal abscess usually lies between the root apex and the gingival margin. Most importantly however, is that the tooth with a periodontal abscess will normally give a positive response on a vitalometer while the periapical abscess gives a negative response. The correlation of clinical

examination, radiographs and pulpal tests once again is the foremost factor in solving endodontic-periodontic problems^{2, 6}

B. Periodontal disease and the pulp

Bender and Seltzer⁷ feel that a definite relationship exists between the presence of periodontal lesions and the status of the pulp tissue. Their histologic examination of the pulps of teeth with periodontal pockets reveal that "intact, uninflamed and seemingly unaffected pulps are found only in a small number of such teeth." Mazur and Massler's⁸ observations differ in that they found that pulps were not affected by periodontal disease. Schilder,⁵ from his clinical experience, concurs with Mazur and Massler and feels that "teeth with normal pulps, sitting in masses of periodontal granulation tissue, will stay normal indefinitely." Only where there is complete denudation of root surfaces by periodontal curettage, thereby disrupting apical blood vessels and nerves, will the pulpal tissues become involved. He

adds that if there is an existent pulpal problem, it will become worse in the presence of a periodontal lesion which encroaches the apical root end.

This concept differs completely from the approach of Bender and Seltzer who believe that periodontal disease can produce pulpal atrophy, resorptions and the entrance of toxic products of periodontal inflammation into the pulp. They believe these processes occur through interference with the blood supply of the pulp through lateral canals, both within the furcation regions and along the sides of the roots.^{7, 9} Philosophically, there can be no argument that a periodontal lesion (or periodontal scaler) encroaching upon a lateral canal will cause deleterious changes in the contents of the lateral canal. However, these changes will affect the main pulp depending on two main preconditions: (1) the size of the lateral canal; and (2) the status of the pulp within that lateral canal.

Small lateral canals associated with a healthy pulp will probably undergo calcification and seal themselves off, while large lateral canals with an unhealthy pulp already traumatized by coronal caries and other dental procedures may succumb to the additional load of toxins from the damaged contents of the large lateral canal.

This argument may therefore account for the basic differences observed histopathologically and clinically.

C. The pulp and periodontal disease

(1) The role of accessory canals

Accessory canals provide another important endodontic-periodontic inter-relationship. There is no doubt today concerning the existence of many accessory foraminae and of accessory lateral canals. The controversy exists upon whether it is necessary to fill them, and almost all the evidence points to the necessity of obliterating the entire root canal system. If one considers that an accessory canal which contains degenerated tissue is a possible source of irritation to the periodontal structures, one can see the necessity for their obliteration. Many accessory canals have communication with bifurcation areas

of multirooted teeth and may indeed contribute to the destruction of paradental bone. Often, combined therapy is necessary to alleviate this problem. Although many of these canals can be located, for the most part, in the middle and apical third of the roots, some can be found in the most bizarre and unsuspecting places. It is therefore not only necessary to attempt to fill these canals but also to test the vitality of every tooth under periodontal care, in order to confirm the source of the problem.^{5,10}

D. Endodontic-periodontic combined therapy

(1) *Hermisections and root amputations*

Very often the furcation of multirooted teeth are prone to relatively early attack by the periodontal disease process. Often this process results in deterioration of the tooth support due to the loss of proper anatomical contours and the retention of plaque material. Unless the furca can be reshaped properly to expose the roots so that regular debridement by routine physiotherapy can be obtained, the tooth is doomed to extraction. Many times the sacrifice of the least supportive roots is therefore preferable.

In each of the different furcation problems a definite treatment plan should be followed. Preferably the initial treatment should be endodontics, in order to reduce the number of organisms in the canal and prevent later contamination which may occur if periodontal procedures precede endodontic treatment.

(2) *Implantations*

There are specific indications which require combined therapy in order to provide intraosseous extension of a

root or roots. A variety of endodontic implants may be used to enhance the crown-root ratio. However, the most important factor in dealing with endodontic implants for periodontal purposes is case selection. It is very easy to abuse this type of procedure, and therefore it should be used only as a last resort.¹¹ In all cases, both endodontic and periodontic aspects of the case should be considered by both the dentist and patient.

(3) *Split teeth*

Occasionally, pulpal death may result from a split tooth due to bruxism or tooth clenching. The teeth most commonly involved are the last molars in each arch and less often maxillary premolars. Very often symptoms of such a problem are difficult to diagnose; however eventually the pulp will become infected from septic material drawn in from the gingival sulcus or from saliva itself. In these cases one must institute immediate endodontic therapy, if this is feasible, by placing a tight copper band around the tooth to prevent movement of the fractured elements and providing endodontic therapy. As soon as this is completed a cast restoration should be placed. With these procedures performed carefully and with proper occlusal equilibration of the entire mouth, healing of the attachment apparatus may occur.

Conclusions

From the above discussion, it is not difficult to see that in reality, endodontics is frequently a specialized form of periodontal therapy, particularly directed toward the periapical region. In both periodontics and endodontics, clinicians attempt to eliminate noxious vectors, such as debris and bacteria, so as to eliminate damage to

and repair of the attachment apparatus. The endodontist deals with a closed system, whereas for the most part, the periodontist deals with a system open to external environment and its coincidental problems. What is important here is to allow one's concepts to run freely with regard to the diseases of the attachment apparatus. "The presence of periodontal disease alone is not pathognomonic of the avenues of destruction. Endodontic, gingival and occlusal factors working under the umbrella of physical health influences, are the prime influences on the health of the attachment apparatus".⁷ Thus, attachment apparatus disease must be considered a disease of many vectors acting singly or in combination and this aetiology must be the most fundamental factor in the preparation of a treatment plan. Respect for all pathways of disease is basic to the practice of sound dentistry.

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The BULLETIN of the
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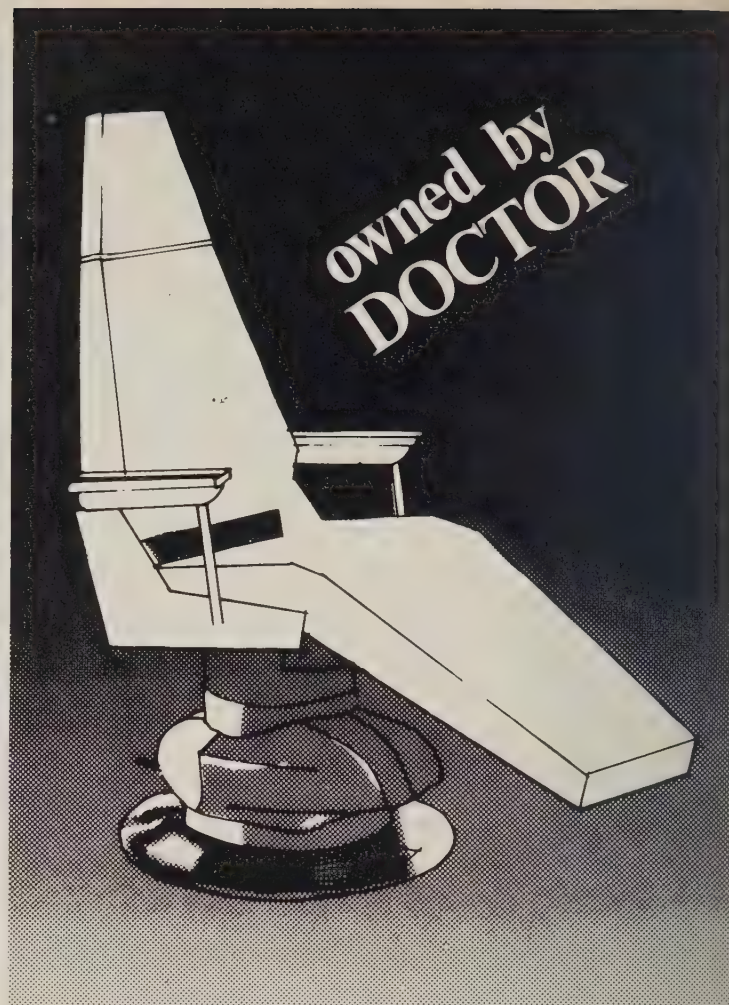
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British Medical Journal,
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Maxillo-mandibular surgery for correction of dentofacial deformities:

5. Mandibular retrusion (retrognathia)

Simon Weinberg, DDS, FRCD(C)
Victor Moncarz, DDS
Toronto

This is the fifth in a series of articles on current practice of maxillo-mandibular surgery. The articles are provided by courtesy of the Royal College of Dentists of Canada.

It is important to distinguish between retrognathia and micrognathia. Micrognathia is defined as a small jaw,¹ while retrognathia is the retrusion of the lower jaw without any diminution in size (as seen in Class II malocclusion). Retrognathia can be a direct result of micrognathia. Both can be surgically corrected by the same surgical procedures; however, the surgical correction of micrognathia is more difficult. Advancement of the chin by osteotomy, implant or bone graft is sometimes necessary in micrognathia.

Micrognathia is characterized by a small body and ramus, pronounced antgonial notching, a steep mandibular angle and a deficient chin² (Fig 1A). In retrognathia the body of the mandible is normal in size and shape and the ramus is usually

underdeveloped. Micrognathia is either acquired or congenital. Congenital micrognathia is rare; it occurs in Pierre Robin syndrome,³ in agenesis of the temporomandibular joint, and in lack of development of the mandibular ramus.² The acquired type of micrognathia is more frequent and is of post-natal origin. It usually results from a disturbance in the area of the temporomandibular joint producing limitation in mandibular growth or ankylosis. This can be the result of trauma, infection of the mastoid or middle ear, or rheumatoid arthritis.²

Orthodontic treatment may be necessary prior to surgery in order to level the accentuated curve in the mandibular arch seen in Class II malocclusion (Fig 2D, E). The deep overbite that is often associated with severe Class II malocclusion should be corrected orthodontically if possible before undertaking surgical advancement of the mandible. If orthodontic treatment is not available, the six mandibular incisors may have to be lowered by alveolar osteotomy prior to surgical advancement of the mandible. If a severe overbite exists, a maxillary anterior alveolar osteotomy is also necessary to elevate the maxillary segment and permit surgical advancement of the mandible.

Various body and ramus procedures have been proposed for the surgical correction of mandibular retrusion. The body procedures — oblique, L

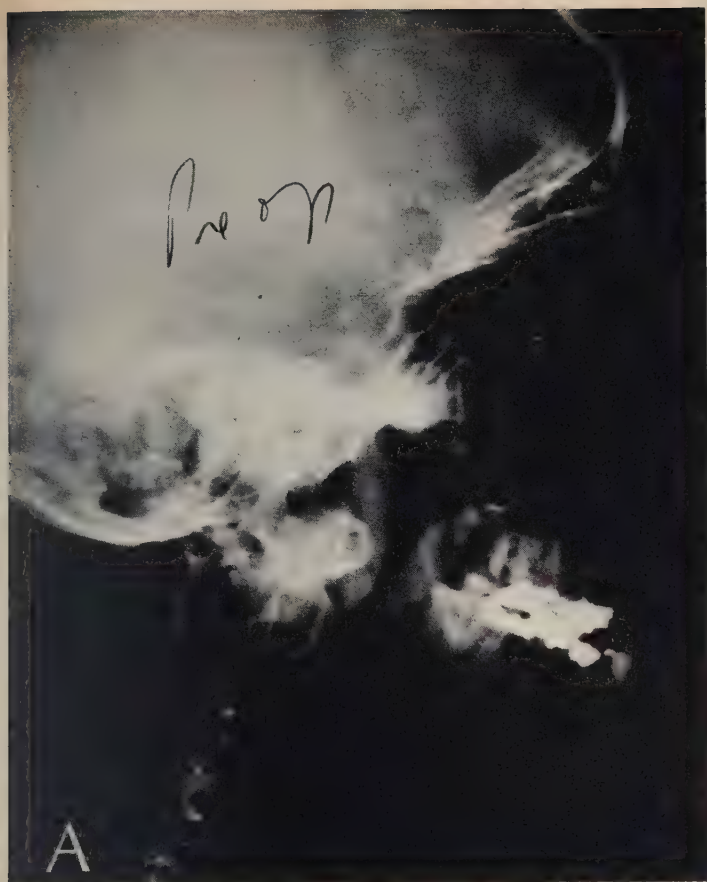


Fig 1 A, lateral skull radiograph of a case of mandibular micrognathia with antigenial notching and deficient chin. B, postoperative radiograph following correction of the chin deficiency by a sliding horizontal osteotomy of the inferior border of the mandible.

shaped sliding, reverse L and reverse step osteotomies⁴ — have been abandoned for the ramus procedures largely because of the frequency of relapse caused by the strong pull of the suprahyoid musculature. The other problems associated with body procedures for the surgical advancement of the mandible have been previously described.⁵

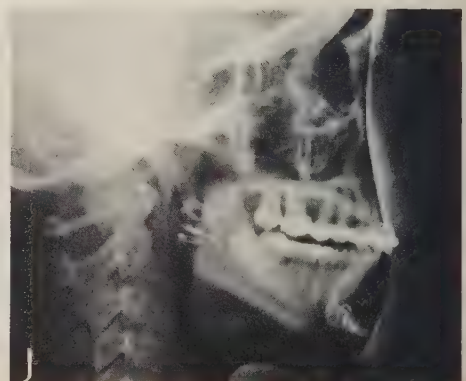
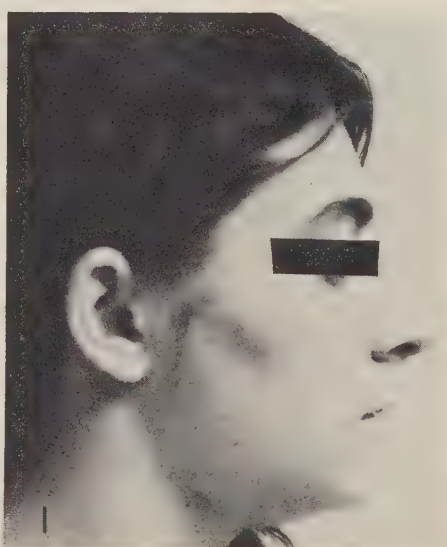
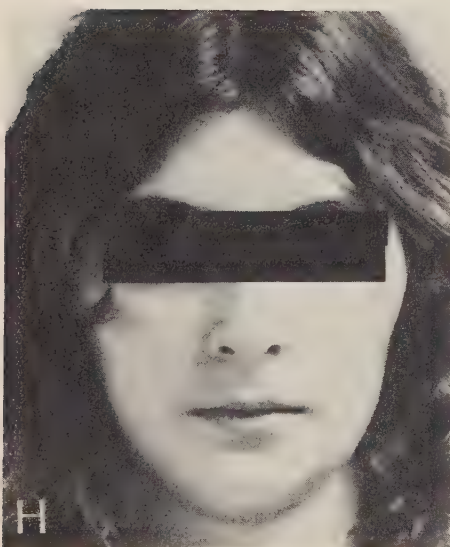
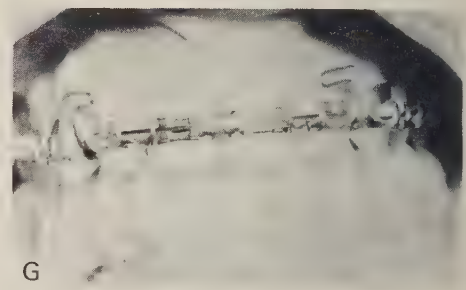
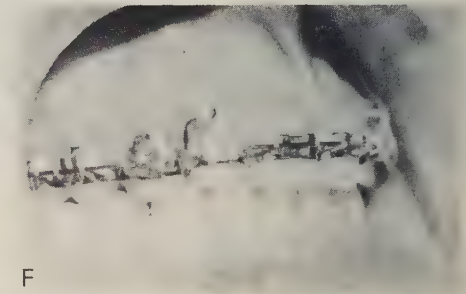
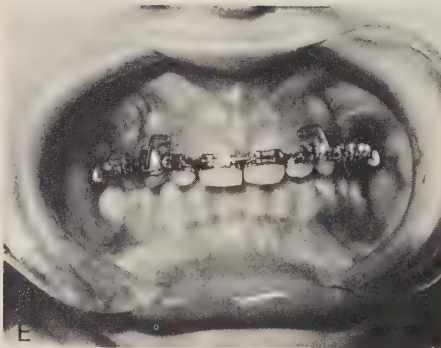
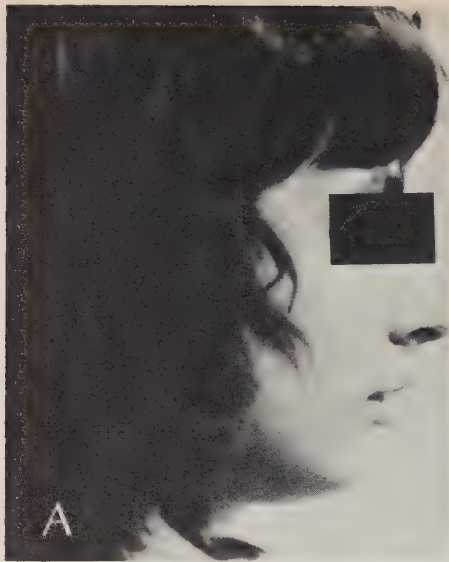
The ramus procedures attempt to provide good bony contact at the osteotomy site. The gonial angle is improved in some of the procedures. There is minimal or no injury to important anatomical structures such as the neurovascular bundle. The difficulties encountered in the surgical correction of micrognathia stem from the fact that there is little bony substance in which to perform an osteotomy. The overlying soft tissue limits the degree of elongation of the lower jaw. This could be a significant factor in the incidence of relapse.

Of the ramus procedures, Dal Pont's⁶ modification of Obwegeser's⁷ sagittal split is ideal (Fig 3A). It provides a large area of cancellous bony contact and, as a result, bony union occurs much earlier. The incidence of relapse with this technique is less than with any other.⁸

The other available ramus procedures are the vertical osteotomy of the ramus with or without bone grafting⁹ and the inverted L and its modification, the C osteotomy¹⁰ (Fig 3B,C). These pro-

cedures allow the mandible to be advanced into a Class I relationship in most cases of retrognathia and even in some cases of micrognathia. *Vertical osteotomy in the ramus with or without bone grafting* — This operation was described earlier.⁵ After the vertical cut is made, a coronoidotomy is performed (Fig 4A). The proximal and distal fragments are separated and the mandible is then fixed into the new improved occlusion. If a bone graft is not used the proximal fragment is rotated into contact with and wired to the distal fragment at the angle of the mandible (Fig 4B). Without grafting, one cannot be certain whether there is sufficient bony contact for proper union. Usually, the V shaped gap between the proximal and distal fragments fills in with new bone, but there is always a degree of uncertainty about the position of the condylar head in the glenoid fossa because the lateral pterygoid muscle can pull the condyle forward in the fossa. Consequently, when bony union occurs, the mandible may again assume a retruded position upon release of intermaxillary fixation.

An autogenous or homogenous bone graft in this area is usually successful because of the generous blood supply. The proximal fragment should be maintained in its preoperative position if such a graft is to be used. Iliac crest bone can be used as an inlay-onlay type of graft after buccal decortica-



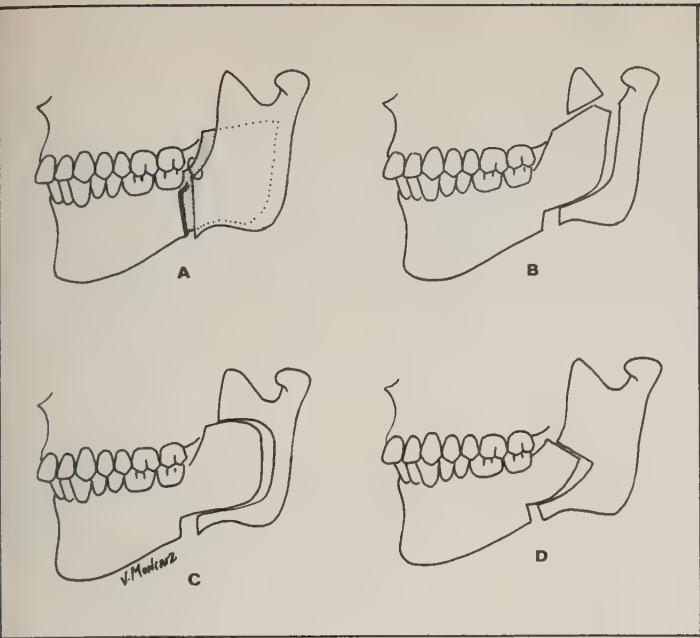


Fig 3 Ramus procedures for surgical correction of mandibular retrusion. A, Dal Pont's modification of Obwegeser's sagittal osteotomy provides a large area of cancellous bone contact. B, inverted L sliding osteotomy. C, inverted C sliding osteotomy. D, modified step section.

tion¹² (Fig 4C). The space between the proximal and distal fragments should equal the distance the mandible is advanced.

We have also used homogenous rib as a graft wedge between the proximal and distal fragments (Fig 2J). The width of the rib graft is adjusted with a bone trimming bur so that it approximates the distance of mandibular advancement. It is then wired into place with transosseous wires (Fig 4D). The rib acts both as a nidus for new bone formation and as a mechanical barrier against the pull which the lateral pterygoid muscle exerts on the proximal fragment and, specifically, on the condylar head. Immobilization should last for 10-12 weeks.¹¹

Inverted L and C sliding osteotomies – These operations are excellent for the correction of retrognathia and micrognathia because they eliminate the need for bone grafting, loss of gonial angle,

Fig 2 A, B, clinical appearance of a patient with mandibular retrognathia. C, patient has advanced the mandible into a Class I occlusal relationship. D, E, orthodontic treatment to level the accentuated curve in the mandibular arch and align the teeth prior to surgery. The occlusal relationship prior to surgical advancement of the mandible is shown in 2D. F, G, postoperative Class I occlusal relationship. H, I, postoperative clinical appearance. The mandible is now in the same position as in 2C. J, postoperative radiograph shows advanced position of the mandible and a sliding horizontal osteotomy of the inferior border to correct the chin deficiency. A rib graft was wired into position after performing a vertical osteotomy of the rami and a coronoidotomy.

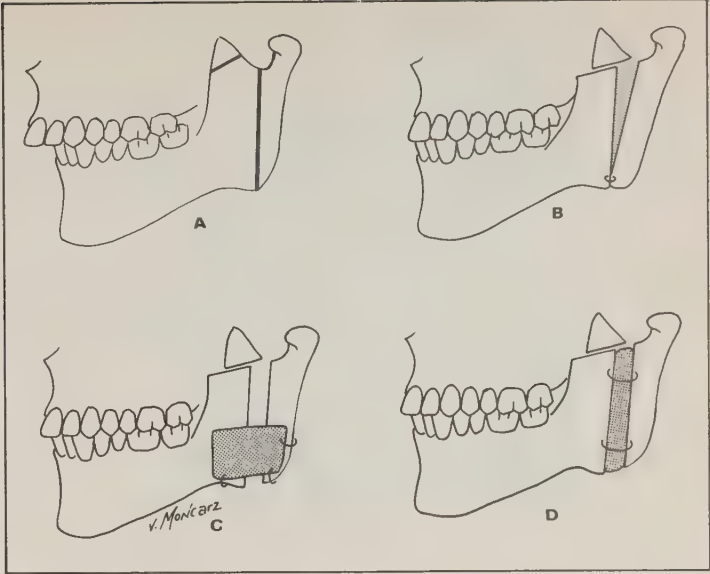


Fig 4 Surgical advancement of the mandible with vertical osteotomy. A, vertical osteotomy of the ramus with coronoidotomy. B, proximal fragment rotated and wired to distal fragment. V-shaped gap fills in with new bone. C, onlay graft with iliac crest bone. D, rib graft wired between proximal and distal fragments.

and unfavourable muscle pull.¹⁰ The proximal fragment maintains its normal function position because the condyle fossa relationship is unaltered. The osteotomies provide good bone contact without damage to the mandibular canal.

Caldwell et al¹⁰ have described three designs (Fig 3B,C,D) which produce the same basic result: vertical section in the ramus with horizontal advancement of the mandible by sliding osteotomies along the lower border. Of the three, the modified step section (Fig 3D), which is done through a combined intra-oral and extra-oral approach, is the most difficult to perform. This operation offers very little advancement since it involves the inferior alveolar nerve and may even jeopardize the roots of the molar teeth.

In the L osteotomy a vertical cut is started from the mandibular notch parallel to the posterior border; but instead of continuing through to the lower border, the lower part of the cut is curved forward and continued for some distance parallel to the lower border of the body of the mandible below the mandibular canal before resuming a downward direction and transecting the lower border. This permits sliding advancement of the body of the mandible (Fig 3B). The coronoid process with its temporalis muscle attachment may be sectioned free, depending on the amount of advancement required.

The C osteotomy completely eliminates the temporalis muscle pull on the distal fragment. It reduces the incidence of relapse and prevents impingement of the coronoid process on the



Fig 5 A, patient with a functional occlusion and retrognathic appearance. B, same patient after augmentation genioplasty with a silicone rubber (Silastic) implant.

zygoma when jaw function is resumed. A horizontal cut made above the mandibular foramen is joined by a vertical cut posterior to the foramen to form an inverted L. The C is completed by a forward extension of the osteotomy parallel to the lower border below the mandibular canal. Rounding of the angles produces a more pronounced C (Fig 3C).

Because these operations require a much larger submandibular incision, they are not used in patients who tend to form keloid. But apart from this, the C osteotomy is an excellent method for the surgical correction of mandibular retrusion.¹²

A careful evaluation of the chin should be made following successful advancement of the mandible into a Class I occlusion. Despite the improved occlusion and the mandibular advancement, these patients may manifest a deficiency of the chin and may therefore still appear retrognathic. Untreated patients with Class I or functional Class II mal-

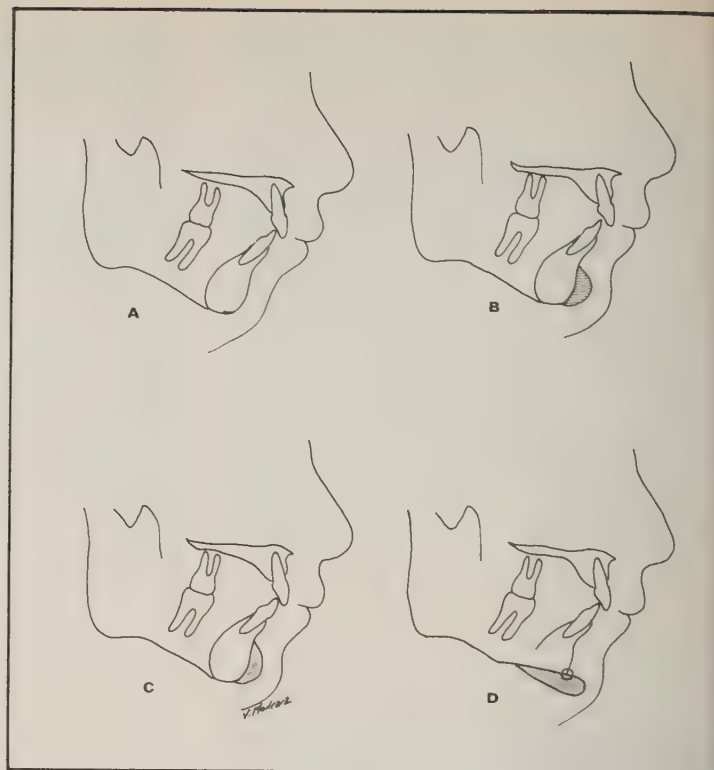


Fig 6 Methods of augmentation genioplasty. A, bone relationship. B, silicone rubber implant. C, onlay bone graft. D, sliding horizontal osteotomy of the inferior border of the mandible.

occlusions may also appear retrognathic (Fig 5A). A change in occlusion may not be necessary or desired for these patients, and the chin alone can be advanced by augmentation through a synthetic implant¹³ (Fig 5B), onlay bone grafts¹⁴ or sliding horizontal osteotomy of the inferior border of the mandible^{15,16} (Fig 6).

Substances such as silicone rubber and acrylic resin can be inserted intra-orally. The material is laid suprapariosteally in a previously dissected pocket in the submucosa and muscle. These implants tend to loosen and migrate into the mandibular bone which gives way under the influence of pressure resorption.¹⁷ Onlay bone grafts — usually iliac crest — can be done intra-orally or extra-orally.

The sliding horizontal osteotomy of the inferior border is ideal for correcting a deficient chin. The fragment is advanced and wired either to the teeth and an acrylic splint,¹⁶ or directly to the mandible¹⁵ (Fig 1B, 2B, 6D). This eliminates the need for any foreign material. Resorption which usually occurs with onlay bone grafts does not occur because a good blood supply is maintained to the advanced segment. In addition, the resulting appearance is more natural because it is the patient's own inferior border of the mandible that is shifted.

The horizontal sliding osteotomy is usually performed intra-orally by degloving the mandible. It can be done with a submental incision. If done intra-orally, a transient anaesthesia of the lower lip results because of stretching of the mental nerve. This advancement genioplasty is an excellent adjunct to the techniques available for surgical advancement of the mandible, especially when striving for an optimum profile in mandibular retrusion.

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Factors related to cholesterol formation in cysts and granulomas

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A statistical analysis of 51 radicular dental cysts, 53 dental granulomas and 50 middle ear cholesteatomas failed to reveal a consistent association between cholesterol formation and cellular breakdown products as evidenced by the occurrence for free haemosiderin or macrophages containing haemosiderin. A significant association between cholesterol and foreign body giant cells was evident in dental granulomas and dental cysts but not in ear lesions. Ear granulomas, on the other hand, exhibited an association between foreign body giant cells and free haemosiderin. These findings cause the authors to question whether dental granulomas are actual precursors of dental cysts or whether each lesion arises de novo.

L'analyse statistique de 51 kystes radiculaires dentaires, de 53 granulomes dentaires et 50 cholestéatomes de l'oreille moyenne n'a révélé aucun lien entre la formation de cholestérol et la dégradation des substances cellulaires révélées par la présence d'hémosidérine libre ou de macrophages porteurs d'hémosidérine. La présence concurrente de cholestérol et de corps étrangers constitués de cellules géantes révèle une association significative évidente dans les granulomes et les kystes dentaires, quoique non existante dans les lésions de l'oreille. En revanche, les granulomes de l'oreille révèlent un lien entre les corps étrangers constitués de cellules géantes et de l'hémosidérine libre. A la suite de ces résultats, les auteurs envisagent les hypothèses permettant de déterminer si les granulomes dentaires sont en fait à l'origine des kystes dentaires ou si chaque lésion évolue de façon autonome.

The incidence of cholesterol in the cavities of dental cysts has been reported from histological evidence on several occasions.

Shear¹ found cholesterol in 28.5 per cent of cases; Browne,² in a much larger study, found an incidence of 43.5 per cent; while Trott³ could only find a 30 per cent incidence. Of additional interest, however, is the evidence presented by Browne² on the origin of cholesterol in dental cysts and his suggestion that once crystals are formed in the connective tissue surrounding a cyst, they are expelled into the cyst cavity as a foreign body.

This study analyzes various cellular and tissue factors which have been associated with the formation of cholesterol crystals in the walls of dental cysts, cholesteatomas and dental granulomas and examines other possible cellular interrelationships.

Materials and methods

Fifty-one radicular dental cysts, 53 dental granulomas and 50 cholesteatomas from the middle ear were examined in this study. The cholesteatomas were further divided into two groups. The first group consisted of 34 clearly defined epithelial lined cysts and the second comprised 16 granulomas without cyst formation.

Sections were cut from material which had been fixed in 10 per cent neutral buffered formalin, blocked in wax in the usual manner and kept on file. As far as possible, the newly cut sections included different levels from the tissues and were at least 20 microns apart. Thus, in any one block over 300 microns of tissue were cut from two non-identical halves of tissue. A section was kept after 20 microns of cutting. Five were stained with haematoxylin and eosin and five with prussian blue for ferric salts. In each case the slides were taken alternately for staining.

Each haematoxylin and eosin slide was examined for the presence or absence of cholesterol,

Means and standard errors for the frequency of occurrence of five variables in four types of pathological lesion

Table 1

Lesion type	No. of specimens	Cholesterol	Foreign body giant cells	Free epithelium	Free haemosiderin	Macrophages with haemosiderin
Dental cysts	51	1.765 ±0.257	0.451 ±0.196	1.941 ±0.272	2.588 ±0.332	3.020 ±0.337
Dental granulomas	53	0.189 ±0.252	0.189 ±0.192	0.811 ±0.267	2.736 ±0.325	2.642 ±0.331
Ear cysts	34	0.559 ±0.315	0.412 ±0.240	1.000 ±0.334	1.824 ±0.406	2.235 ±0.413
Ear granulomas	16	1.563 ±0.459	1.563 ±0.349	0.000	2.625 ±0.592	3.000 ±0.602

foreign body giant cells and free epithelium. On the slides stained with prussian blue, the presence of haemosiderin in macrophages and of free haemosiderin was determined.

The presence or absence of each of the five variables studied was determined regardless of its quantity or location on the slide. Each specimen was then assigned a score ranging from 0, where the structure could not be detected on any of the slides, to 5 where it was present on all five slides examined.

The data, therefore, consisted of five variables measured on each of the four groups of lesions. These groups were the same as described earlier and were given the names dental cyst, dental granuloma, ear cyst and ear granuloma. The variables were cholesterol, foreign body giant cells, free epithelium, free haemosiderin and macrophages with haemosiderin.

The statistical analysis consisted of two parts. First, an analysis of variance where each variable was analyzed separately to detect significant differences among the mean levels of the four groups. This was followed by a comparison of means by a multiple range test. Secondly, the 5 x 5 correlation matrix between all possible pairs of variables was calculated and examined for each group independently. This was followed by a multilinear regression to study the effect of the two haemosiderin variables (free and with macrophages) on each of cholesterol, foreign body giant cells and free epithelium.

Results

The cholesterol had been present in the tissues, in crystalline form, in groups of cleft-like rhom-

boid spaces. In some cases it was also found in the cavity of the dental cysts. These spaces were due to the fact that the crystals of cholesterol had been dissolved out during the histological processing of the sections.

Foreign body giant cells consisting of large multi-nucleated irregularly shaped cells were found in the tissues around the crystals of the cholesterol.

The free epithelium appeared isolated in the tissues, not lining any cavity nor surrounding the lesion. Most of the time it had a round or elongated form, giving the impression of being the horizontal cut of long "ropes." Though we did not observe any connection between the free epithelium and the epithelial lining of the cyst cavities, this possibility cannot be ruled out.

The haemosiderin in macrophages and the free haemosiderin stained a bright blue colour in the prussian blue stained slides. The macrophages had an irregular but rounded boundary surrounding a large strongly stained nucleus. They appeared in groups with or without free haemosiderin among them.

Table 1 shows, for each group, the means and standard errors for the frequency of each of the five variables studied. Significant differences detected by the multiple range test are summarized in Table 2.

With the exception of free epithelium in the ear granulomas, the various structures occurred in all groups. Significant differences among groups were detected for cholesterol, foreign body giant cells and free epithelium, while the mean levels for each of the two haemosiderin variables were not significantly different among the groups.

Cholesterol was most often observed in dental cysts and ear granulomas. Its frequency in these

Significance of differences detected by the multiple range test for each of the five variables

Table 2

Comparison*	Cholesterol	Foreign body giant cells	Free epithelium	Free haemosiderin	Macrophages with haemosiderin
DC - DG	§		§		
DC - EC	§		+		
DC - EG		§	§		
DG - EC					
DG - EG	+	§			
EC - EG		+			

*DC - dental cysts, DG - dental granulomas, EC - ear cysts, EG - ear granulomas

+Significant at 5% level

§ Significant at 1% level

two lesions was significantly higher than in dental granulomas and ear cysts.

Foreign body giant cells were found in ear granulomas with an average frequency of 1.56 times out of each five slides. This is significantly higher than their occurrence in the other three types of lesion.

Free epithelium was observed in the dental cyst twice as frequently as in ear cysts or dental granulomas.

The mean frequencies for macrophages with haemosiderin and free haemosiderin were considerably higher in all lesions but did not differ significantly in the different types of lesion.

The relationships among the five variables within each of the four lesions are presented as Pearson product-moment correlation coefficients in Table 3.

Cholesterol and foreign body giant cells were significantly correlated in all four lesion types. A complete correlation occurred in each of the dental granulomas and ear granulomas while the correlation coefficient in dental cysts did not exceed .44, indicating a weak though significant dependence of the two variables. Except in ear cysts, the relationship between cholesterol and free epithelium was negligible. In the ear cyst the correlation coefficient was .45, indicating a predictability not exceeding 20 per cent.

Foreign body giant cells and free epithelium were significantly correlated in ear cysts only. The predictability, however, did not exceed 12 per cent.

The relationship between the two haemosiderin variables was significant and high in all tissues. The effect of these two variables on each of cholesterol,

foreign body giant cells and free epithelium was studied for each type of tissue by a multilinear regression. The results are presented in Tables 4, 5 and 6 respectively.

The combination of the two haemosiderin variables account for a significant portion (50 per cent) of the variability in the cholesterol in the ear granulomas (Table 4), while the predictability was lower in dental cysts and ear cysts and not significant in dental granulomas. This effect seems to be mainly due to the free haemosiderin.

The effect of the two variables on the occurrence of foreign body giant cells is significant in ear granulomas and ear cysts only (Table 5). The predictability figures, however, are 50 per cent for the ear granulomas and 19 per cent for the ear cysts. Most of this effect is also due to the free haemosiderin.

Table 6 shows that, with the exception of dental granulomas, the two haemosiderin variables had no significant effect on the free epithelium. In the dental granulomas the predictability, although statistically significant, did not exceed 13 per cent.

Discussion

Browne² describes the two schools of thought on the origin of cholesterol in dental cysts.

The first suggests that it results from metaplasia of the epithelium lining the cyst cavity and the subsequent process of cornification and desquamation.⁴ This view is hard to support in view of Browne's observations that cholesterol is found more frequently in the cyst capsule than in the cyst cavity and also the fact that cholesterol is sometimes found in periapical granulomas.

Simple correlation coefficient* between pairs of variables for each of four lesions

Table 3

Variables	Dental cysts	Dental granulomas	Ear cysts	Ear granulomas
Cholesterol — foreign body giant cells	44§	100§	89§	100§
Cholesterol — free epithelium	07	-09	45§	00
Cholesterol — free haemosiderin	56§	18	44§	71§
Cholesterol — macrophages with haemosiderin	54§	20	41+	57+
Foreign body giant cells — free epithelium	03	-09	35+	00
Foreign body giant cells — free haemosiderin	19	18	43+	71§
Foreign body giant cells — macrophages with haemosiderin	27	20	35+	57+
Free epithelium — macrophages with haemosiderin	04	-36§	-04	00
Free epithelium — free haemosiderin	04	-20	-01	00
Free haemosiderin — macrophages with haemosiderin	76§	66§	75§	84§

* Decimal point omitted

+ Significant at 5% level

§ Significant at 1% level

The second school suggests that cholesterol arises from breakdown of erythrocytes in the tissues. The erythrocytes are there, according to Shear,¹ because of constant local haemorrhage probably arising from inflammation in the cyst capsule. Since both haemosiderin and cholesterol are breakdown products of the erythrocytes, it is not unreasonable to assess the association between the iron containing pigment and the rhomboid spaces in the tissues. Browne² found a close correlation between cholesterol and haemosiderin and also noted that cholesterol was more frequently associated with the inflammatory type cyst than non-inflammatory odontogenic cysts. In this study we also noted a close correlation between cholesterol and macrophages containing haemosiderin as well as the haemosiderin free in the tissues (Table 4). However, our regression analysis shows that in dental cysts only 35 per cent of the cholesterol may be formed from this association. The only

other element that showed a significant association with cholesterol was the multinucleated foreign body giant cell. It seems unlikely that this cell would be a factor in cholesterol formation. Its association is more likely one that is consistent with its nomenclature in that, as Browne suggests, cholesterol formed in the cyst wall will be exfoliated into the cyst cavity as a foreign body.

Thus, in dental cysts, one has to account for the formation of 65 per cent of the cholesterol from sources other than the breakdown products of erythrocytes. The mechanism for the formation of cholesterol in tissues in general is far from clear, but it does appear that local factors are important. Both Hertz⁵ and Das⁶ have been unable to find any association between blood cholesterol levels and formation of cholesterol in cysts either in the jaws or in the ears.

In the walls of inflammatory odontogenic cysts one finds a dense cellular infiltration consisting

Multilinear regression analysis on cholesterol of macrophages with haemosiderin and free haemosiderin

Table 4

Lesion type	Multiple correlation coefficient (R)	Predictability (R ²)	Intercept	Partial regression coefficient	
				Macrophages with haemosiderin	Free haemosiderin
Dental cysts	0.588§	35%	-0.026	0.263	0.385+
Dental granulomas	0.209	4%	-0.055	0.052	0.038
Ear cysts	0.455+	21%	-0.073	0.125	0.193
Ear granulomas	0.709+	50%	-0.301	-0.060	0.778

+Significant at the 5% level
§ Significant at the 1% level

Multilinear regression analysis on foreign body giant cells of macrophages with haemosiderin and free haemosiderin

Table 5

Lesion type	Multiple correlation coefficient (R)	Predictability (R ²)	Intercept	Partial regression coefficient	
				Macrophages with haemosiderin	Free haemosiderin
Dental cysts	0.276	8%	-0.032	0.186	0.030
Dental granulomas	0.209	4%	-0.055	0.052	0.038
Ear cysts	0.431+	19%	-0.071	0.038	0.218
Ear granulomas	0.709+	50%	-0.301	-0.060	0.778

+Significant at the 5% level

mainly of lymphocytes and plasma cells with the additional presence of large numbers of macrophages. The explanation for this cellular reaction is far from clear, but there seems good reason to relate this phenomenon to complex immune reactions.⁷ If this be so, there must be a continual degeneration and disintegration of cells taking part in the inflammatory immune reaction with consequent release of cholesterol from their walls. Thus, in due course — and most of these lesions are

considered to be of a long-standing nature — there would be a slow but considerable accumulation of cholesterol in the tissue spaces. Being a lipid, it would also attempt to concentrate. The combined effects of accumulation and concentration of cholesterol in the tissues would thus result in crystal formation.

Obviously, this cannot be the whole story. Toller⁸ suggests that there is a limited lymphatic drainage from bone which would favour the local-

Lesion type	Multiple correlation coefficient (R)	Predictability (R ²)	Intercept	Partial regression coefficient	
				Macrophages with haemosiderin	Free haemosiderin
Dental cysts	0.047	0.2%	1.802	0.025	0.025
Dental granulomas	0.367+	13%	1.497	-0.307+	0.046
Ear cysts	0.043	0.2%	1.060	-0.051	0.029
Ear granulomas	0.000	0	0.000	0.000	0.000

+Significant at the 5% level

ized build-up of cholesterol. However, dental granulomas also occur in alveolar bone and cholesterol is an infrequent component of such lesions. Moreover, similar circumstances apply to the lymphatic drainage in dental granulomas and cysts. Thus, while lipids freed as the result of lymphocytic and macrophage degeneration may play a large role in the local accumulation of cholesterol, there are obviously other factors at work. That there may be essential differences between the dental granuloma and the dental cyst is also borne out by the lack of correlation between cholesterol and macrophages containing haemosiderin and free haemosiderin in the former and not in the latter (Table 3). In fact, so few common factors have been revealed in this study at the cellular and tissue level between the dental granuloma and the dental cyst that one may question whether the dental granuloma is truly a precursor to the radicular cyst or whether each arises *de novo*.

One factor which the dental cyst and the dental granuloma share is the significant relationship of foreign body giant cells and cholesterol. But there is a marked difference in the degree of predictability in the two lesions: in the periapical granuloma, giant cells were always associated with cholesterol while in the dental cysts, although the association was highly significant ($P < 0.01$), cholesterol and foreign body giant cells were only associated 19 per cent of the time. If cholesterol provokes or stimulates foreign body giant cells it is indeed strange that the same substance would display such quantitatively different responses.

This difference is further exemplified by the situation in the ear granulomas. Here one notes a significant relationship of foreign body giant cells with free haemosiderin ($P < 0.1$) with a predictability of this occurring 49 per cent of the time; yet no such relationship is noted (Table 3) in the dental cyst or dental granuloma.

The analysis of the relationships of the various cell and tissue components in ear cysts and ear granulomas did not elucidate the problem of cholesterol formation any further. While there were some similarities, there were too many marked dissimilarities for any guidance to possible associations.

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Replacement of silver amalgam restorations by 50 dentists during 246 working days

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A recent survey of 50 British Columbia general practitioners revealed that the average respondent replaced 6.6 amalgam surfaces each working day. Projected to a 230 work day year, the average dentist would thus replace 1,518 amalgam surfaces annually, representing more than \$9,000 worth of dental treatment. New caries, recurrent caries and decay under existing restorations were cited as the main reasons for the replacement of the fillings. The authors conclude that dentists should pay more attention to the repair and maintenance of existing restorations and the prevention of dental caries.

Une étude récente portant sur 50 dentistes de la Colombie-Britannique a révélé qu'en moyenne un dentiste remplace 6.6 surfaces restaurées à l'amalgame, chaque jour ouvrable. En projetant ces données sur une période d'une année de 230 jours ouvrables, le dentiste serait susceptible de remplacer en moyenne 1,518 surfaces d'amalgame annuellement, représentant au-delà de \$9,000 de traitements professionnels. Les nouvelles caries, les caries récidivantes et la présence de carie sous les restaurations existantes sont considérées comme les causes principales du remplacement des obturations. Les auteurs en concluent que les dentistes devraient accorder plus d'attention à l'entretien des restaurations existantes et à la prévention des caries dentaires.

Amalgam restorations have frequently been evaluated for durability,¹⁻⁴ failure⁵⁻¹⁰ and design.¹¹⁻¹³ Many of these studies were conducted in the university environment where a number of restorations were examined and divided into error categories. Gibb¹⁴ examined 100 patients and found that 44 per cent of the amalgam restorations required replacement. Easton¹⁵ examined 415 restorations scheduled for replacement due to recurrent caries and recorded the frequency of errors. The more common reasons given for failures were cavity design (approximately 50 per cent) and faulty manipulation of the material (approximately 40 per cent).

This investigation was designed to gather information on the number of amalgam restorations being replaced by practising dentists and the reasons for replacement. Amalgam restorations designated as failures by university clinics may not be replaced by the practising dentist, or the reasons for replacement may be quite different.

Method

A sample of dentists in British Columbia was taken from the 1971 registrar's list. Every tenth name was selected provided the dentist had graduated within the last 20 years and was in general practice. When a dentist did not meet these criteria, the next closest name was chosen. Letters and recording forms were mailed to 93 dentists. Thirty-nine per cent were graduates of Alberta, 15 per cent were Toronto graduates, 15 per cent

Percentage distribution of BC dentists by source of education, sample and BC total Table 1

University	Sample*	BC
Alberta	39	32
Toronto	15	18
McGill	15	10
Oregon	8	14
Other Canadian	10	12
Other US	6	8
Non-North American	6	6
Total	100	100

*Receiving recording forms

Distribution and response to form letters Table 2

	Dentists		Respondents	
	Mailed	Ineligible	No.	%
Vancouver and Victoria	55	2	29	54
Other centres	38	3	21	57
Total	93	5	50	56

McGill graduates and 8 per cent Oregon graduates (Table 1). They were asked to record the number of amalgam surfaces they replaced on five consecutive working days, indicating the reasons. More than one reason could be given. They were also requested to record the patient's age, the tooth treated and the type of restoration placed.

The 12 reasons listed on each recording form were: recurrent caries at the margin of an existing restoration, new caries elsewhere than at the margin of an existing restoration, caries under an existing restoration, chipped margin, poorly contoured restoration, overhanging margin, fractured tooth, pulpal pathology, fractured amalgam, gold replacement, original amalgam fell out, and other reasons.

Results

Fifty completed forms were returned: 29 from Victoria and Vancouver and 21 from smaller rural centres throughout the province. This is a 56 per

Amalgam surfaces removed and replaced by 50 dentists during 246 working days Table 3

Mean age of patients in years	26.5
Teeth from which amalgams were removed	937
Surfaces removed	1,643
Surfaces restored	1,991
Crown placed	53

Reasons for the removal of 1,643 amalgam surfaces during 246 working days Table 4

Reason	Amalgam surfaces	
	No.	%
Recurrent caries	294	23
New caries	387	31
Caries under amalgam	174	14
Chipped margin	68	5
Poorly contoured	37	3
Overhanging margin	25	2
Fractured tooth	88	7
Pulpal pathology	23	2
Fractured amalgam	112	9
Gold replacement	10	1
Original amalgam fell out	29	2
Other	6	1
Total	1,253	100

cent response (Table 2). With 982 licensed general practitioners in BC, the 50 completed forms represented a 5 per cent sample. Information from the 50 completed forms is shown in Table 3. The total working days represented are 246; 48 dentists recorded totals for five working days, one for four working days and one for two working days. The number of teeth in which restorations were removed totalled 937 (3.8 per dentist per working day). A total of 1,643 amalgam surfaces were removed from the 937 teeth; 1.75 surfaces per tooth and 6.7 surfaces per day per dentist. The 1,991 new and replaced amalgam surfaces represent 2.25 surfaces per tooth. Fifty-three crowns were placed.

The reasons for removal of the amalgam surfaces are shown in Table 4. Reasons 1, 2 and 3, which involve caries, constituted 68 per cent of all recorded reasons. Reasons 1 and 2 (recurrent and new caries) were 54 per cent of the total. Often more than one reason was given for the removal of an amalgam restoration. Several times one reason was given for the removal of a restoration with

three or more surfaces. Thus the total number of reasons recorded does not equal the total surfaces removed. The frequency of single and multiple reasons is shown in Figure 1. Only five reasons are included in this figure as they represent 84 per cent of the total recorded.

Of the 937 teeth from which restored surfaces were removed, 92 per cent involved permanent teeth and 8 per cent primary teeth. The first and second permanent molars totalled 568, which is 61 per cent of all permanent teeth. The first molars made up 39 per cent of involved permanent teeth. The tooth most frequently involved was the mandibular first permanent molar. For permanent teeth the ratio of mandibular to maxillary teeth was 57 to 43.

Discussion

Silver amalgam restorations account for 56 per cent of total dental costs for patients in the 0-24 year age bracket.¹⁶ For all ages the percentage is 37.

A major portion of university undergraduate curricula is devoted to learning the theory and acquiring the skills of placing amalgam restorations. Great emphasis is placed on the details of cavity preparation; extension for prevention, line and point angles, marginal finish. The handling of the material is also emphasized from its trituration to the final finishing. The students learn these details and become proficient in the placement of amalgam restorations with the thought that their restorations are "permanent." How long is "permanent?" Robinson³ reports that 50 per cent of amalgam restorations fail after 10 years and 75 per cent after 20 years. Allan¹ places the maximum duration of any amalgam restoration at 25 years.

Results of the present investigation indicate that a dentist in general practice in British Columbia who has graduated within the last 20 years removes an average of 6.6 amalgam surfaces per day from 3.8 teeth. Assuming that he works for 230 days per year (five day week, 46 weeks), 1,518 surfaces are removed per year. Estimating the cost per surface at \$6, the 1,518 removed surfaces represent \$9,108 worth of amalgam restorations per year per dentist — approximately 20 per cent of his gross income. For 1,000 general practitioners who have graduated within the last 20 years the value of amalgam fillings removed during one year would approach \$9,108,000.

The predominant reason for removal and replacement is dental caries (68 per cent), with new caries accounting for 31 per cent of all reasons and occurring as a single reason 78 per cent of the time (Fig 1). Recurrent caries and caries under existing

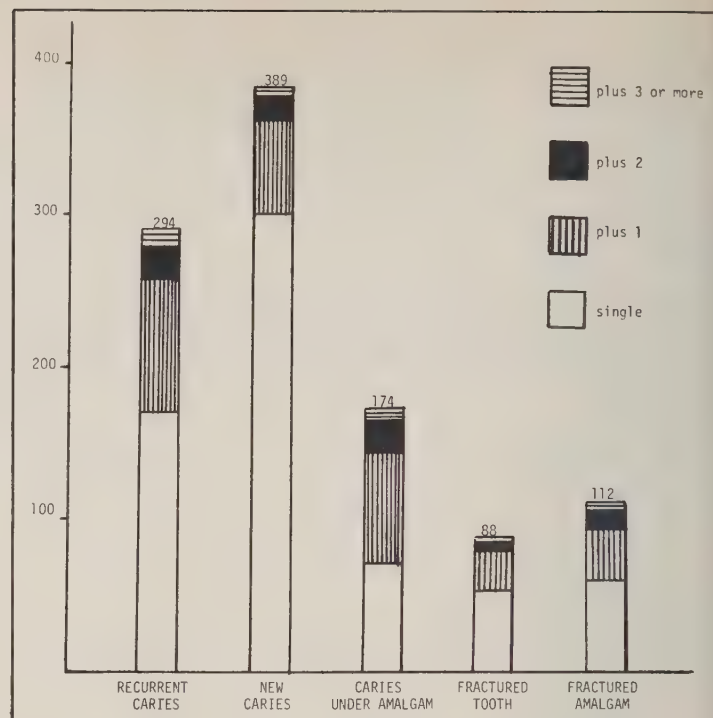


Fig 1 The most frequent reasons given for the removal of amalgam restorations, occurring singly and jointly with one or more other reasons.

restorations occur less frequently as a single reason. Caries under existing restorations as a reason for removal occurs 60 per cent of the time with one or more reasons.

The dentists involved in this study, and generally in BC, are predominantly graduates from Canadian and US universities where the "details" of operative dentistry are stressed: extension for prevention, retentive grooves, 90 degree cavo-surface margin, and the use of rubber dam. If the teaching is effective, these practitioners would be completing their operative procedures as taught during their undergraduate training. We have assumed that this is so and that restorations are therefore being extended for prevention. If each general practitioner removes 6.6 amalgam surfaces per working day, dentists generally are continuously removing each others' and their own restorations. Perhaps extension for prevention is not an effective means of controlling caries, for the restorations are presumably being extended and recurrent caries is one main reason for the removal of amalgam restorations (Table 3). If the restorations are not being extended, the teaching programs must be at fault.

With caries given as the dominant reason for the removal of amalgam restorations, prevention and control will need far greater emphasis — at the undergraduate level, in public clinics and in private practice. This may entail some adjustment of university timetables, and it may therefore be necessary to reallocate some of the time presently devoted to operative dentistry instruction in order

to strengthen the teaching of preventive dentistry. Such a realignment can be justified on the grounds that successful operative and restorative treatment is directly dependent on the efficacy of caries control.

Another possible explanation for the high turnover of amalgam restorations is that the ideal restoration as presented to dental students may be actually too idealistic. Perfect restorations rarely exist in the average patient; new graduates may therefore be excessively zealous in replacing existing restorations, only to have their replacements look much like the originals within a few years. More emphasis must be placed on the maintenance of existing restorations rather than their replacement. Surfaces can be re-contoured and finished, and sealants may become an effective means of sealing ditched margins.

The introduction of prepaid dental programs along with expanded duties for auxiliaries will surely increase the volume of both initial and replacement restorations. To introduce such a program without comprehensive prevention would be a waste of time, effort and money. All dentists should have a useful and practical program of prevention available to their patients, and universities should adjust their curricula to emphasize prevention of dental caries and maintenance of restorations. The alternative is the continued placement of thousands of temporary amalgam restorations at excessive expense.

Summary

Information on the replacement of amalgam restorations was obtained by questionnaires from 50 BC dentists. Total working days represented 246. A total of 1,643 amalgam surfaces were removed from 937 teeth (1.75 surfaces per tooth and 6.6 surfaces per day per dentist). New and replaced amalgam surfaces totalled 1,991 (2.25 surfaces per tooth). At 6.6 surfaces per day during a 230 work day year, 1,518 amalgam surfaces would be removed yearly by the average dentist. At \$6 per surface, these 1,518 surfaces represent \$9,108 worth of amalgam restorations removed per dentist per year.

Of the 12 major reasons for removal, new caries (31 per cent), recurrent caries (23 per cent) and caries under existing restorations (14 per cent) represented 68 per cent of all recorded reasons. Percentages for fractured amalgam and fractured teeth were 9.0 and 7.0.

The information obtained in this survey supports the following proposals:

1. Dental faculties should re-orient their instruction in operative and restorative dentistry by emphasizing caries prevention and the maintenance of restorations.

2. Dentists should make preventive programs available to their patients.

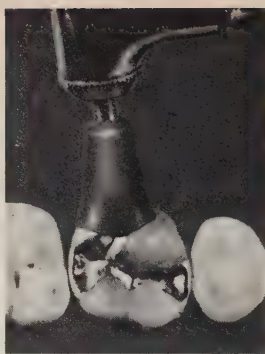
3. Dentists should curb their enthusiasm for replacing existing amalgam restorations and make more use of surface recontouring procedures and marginal sealants.

4. Comprehensive preventive programs must precede all tax-supported prepaid dental plans.

Dr. Richardson is associate professor and Dr. Boyd is an instructor in the Department of Restorative Dentistry, Faculty of Dentistry, University of British Columbia, Vancouver 8.

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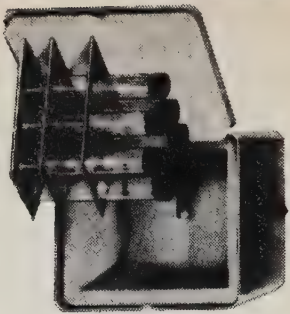
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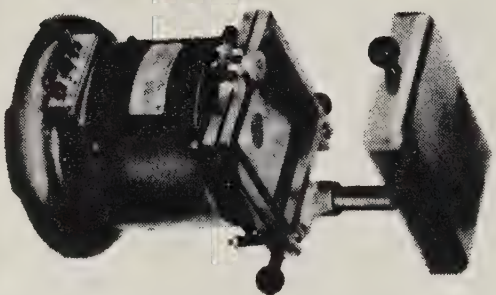
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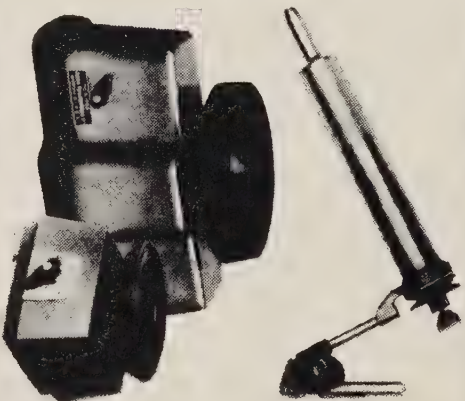
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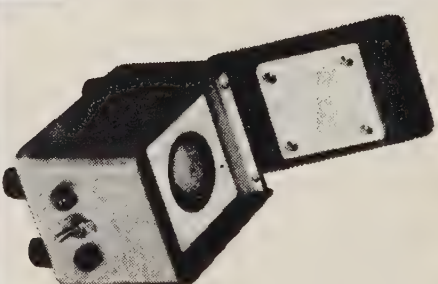
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Book Reviews

Restorative Dental Materials

F. A. Peyton and R. G. Craig, ed. Ed 4. St. Louis, The C. V. Mosby Company, 1971, 535 p. Illus. \$20.50

The fourth edition of this well-known text shows R. G. Craig and F. A. Peyton as co-editors, with contributions by K. Asgar, G. T. Charbeneau, G. E. Myers and now W. J. O'Brien. All are members of the School of Dentistry of the University of Michigan. As stated in the preface, this is primarily a textbook for the undergraduate dental student. It provides him with the basic information necessary to interpret the laboratory and clinical behaviour of dental materials. Many dentists and even graduate students will also find it useful for purposes of revision.

The book is divided into 15 chapters dealing with the scope and history of restorative materials, applied fundamental principles, physical and mechanical properties, bio-physical applications of materials, nature of metals and alloys, impression materials, gypsum compounds, waxes, gold and its alloys, casting procedures, base metal alloys, amalgam, cements, plastics and porcelain. Surprisingly for a new edition, the text has been reduced to 511 pages from the 535 in the third edition. Though the index has been increased from 14 to 21 pages, all other material has been reviewed with resultant reductions of one to three pages in most chapters. The largest reduction is in the chapter on amalgam which now occupies five pages. However, all chapters contain new material, especially

those dealing with the basic structure and properties of dental materials.

The emphasis of the book is seen in the fact that more than a quarter of the text is devoted to a discussion on principles of the structure and properties of materials. Anyone out of touch with the latest development in these areas will find these chapters particularly valuable since they provide numerous applications of basic principles to dentistry, including ultrasonics, the electron microprobe and scanning electron microscope, and forces and stresses on dental structures. Chapters dealing with specific classes of materials have considerable factual detail and discussion and an appropriate list of literature references up to 1970. There is also a welcome emphasis on the relationship of properties to the clinical manipulation and application of the various materials. Because of the rapidity of new developments in the field of dental materials and the time lapse inherent in the production of a textbook, it is very difficult for authors to be completely up to date. Nevertheless, this book considers recent developments in areas such as spherical amalgams, pit and fissure sealants, composite resins and polycarboxylate cements. Advances in the chemistry of silicate cements and gold and base metal alloys are also included.

Most sections clearly show the application of new knowledge. For example, there is more attention to mechanical properties and much improvement in the text and illustrations relating to metals. In one or two instances, though, the new figures are not entirely satisfactory. For example, Figure 12.17 illustrating the proper consistency of a dental amalgam is less satisfactory than the corresponding illustration in the previous edition.

Some areas would benefit from amplified discussion. For example, there is little information on aluminous porcelain and the discussion on adhesion could be extended in view of its importance. In general, however, the authors have succeeded admirably in their desire to present a readable and informative undergraduate textbook. This edition continues to be a valuable aid in all teaching courses; it should also be in the library of every practitioner.

D. C. Smith

Modern Practice in Crown and Bridge Prosthodontics

J. F. Johnston, R. W. Phillips and R. W. Dykema, Ed 3. Philadelphia London and Toronto, W. B. Saunders Company, 1971, 692 p. Illus. \$18.05

This book is a valuable reference for students of dentistry and dental technology, and many aspects are of interest to the practising dentist. However, it tends to be unwieldy and conservative and retains too much outdated material from the previous editions. Little has been added on new procedures in restorative dentistry. The approach is mechanical rather than physiologic, with emphasis on the replacement of missing teeth rather than retention of existing teeth and on the number of abutments rather than their attachment apparatus and periodontal health.

Several chapters give limited coverage. In discussing pin reinforced foundations, only the cemented threaded pin technique is given. There is no mention of Thread Mate System pins or friction grip pins or the use of materials such as composite resin. Discussion on temporary coverage is limited to one technique which employs alginate impressions. The chapter on pin retainers is restricted to only one method which employs a paralleling device and Williams plastic pins.

The chapters on wax patterns, spruing, investing and casting are excellent. Beyond detailed techniques, precautions and instrumentation, there is a precise identification of products by manufacturers.

The chapters on pontic and pontic form provide much detail which is of limited universal application. The infrequent use of Trupontics, Steele's flat-back and reverse-pin facings does not justify such extensive coverage. The discussion on pontic form lacks reference to the numbers of abutments and their attachment apparatus or stress-bearing potential. Nor is there mention of the importance of positioning pontics only on attached gingiva.

The chapter on soldering is similar to that of previous editions. The rationale of using plaster as an indexing material can be questioned when newer materials such as Duralay are widely used with greater ease and accuracy.

The glazing and staining of porcelain facings gets detailed coverage even though few dentists use facings today.

Aside from clinical technique for the cementation of crowns and bridges, there is an unbiased discussion of the various cements available including their respective advantages and disadvantages.

There are four chapters on porcelains, porcelain furnaces, porcelain bonded restorations and porcelain jacket crowns. No previous text has covered these subjects so completely.

Although they do not use resin in permanent crowns and bridges, the authors include detailed coverage of this material because it remains a part of the dentist's armamentarium.

The controversy between full and partial coverage is carefully analysed, together with some interesting indications for each. The chapters on splinting and pulpless teeth could have been more extensive. Removable partial dentures are discussed in relation to crowns and bridges but there is no information on precision attachments. Various concepts for complete oral rehabilitation are mentioned without elaboration.

The P. K. Thomas technique for forming functional occlusal relationships in wax is illustrated here as in numerous previous texts.

Although this book has several deficiencies and redundancies it remains one of the best in crown and bridge prosthodontics.

Harry Rosen

Orban's Periodontics: A Concept – Theory and Practice

D. A. Grant, I. B. Stern and F. G. Everett. Ed 4. St. Louis, The C. V. Mosby Company, 1972. 715 p. Illus. \$22.85

The stated purpose of the editors, Grant, Stern and Everett, is to present a "learning textbook . . . written for the undergraduate dental student and for the general practitioner." Thirty-two different contributors, many of them well-known authorities, have helped to ensure that this objective is met.

All aspects of periodontics are well covered. The periodontium in health and disease is discussed histologically with an interesting new chapter on ageing. The section on oral environment includes a new chapter on saliva and an extended one on microbiology.

The section entitled "Introduction to Periodontal Disease" covers classification, aetiology, nature, epidemiology and prevention. It also has a new chapter on nutrition and one on plaque control. (It is interesting to note that after so many years of controversy, periodontosis is now classed under "Etiology Unknown.")

Under the section "Elements of Therapeutic Judgment" there is an interesting chapter on the psychologic aspects of periodontics. This section also clearly outlines examination and diagnosis as well as prognosis and treatment plan.

The inflammatory and dystrophic disease processes are well covered as are the various treatments. As might be expected all types of periodontal surgery receive close attention. Although the editors may have their own treatment preferences they have presented this material in a most unbiased way giving each procedure careful consideration.

This edition has more material on bone grafts and transplants but generally speaking all treatment procedures are well covered with good accompanying illustrations.

The editors have, I believe, fully accomplished their stated aim of providing a comprehensive text of value to both the dental student and the practitioner.

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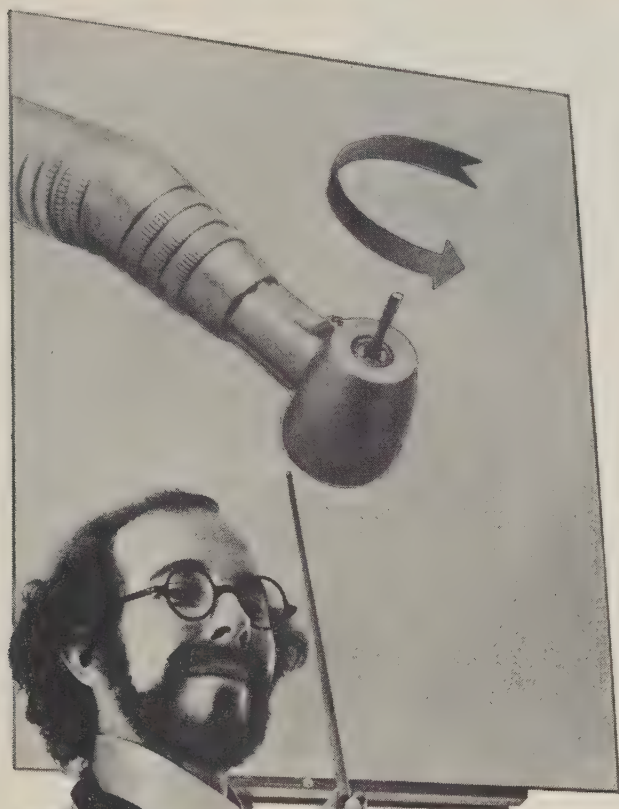
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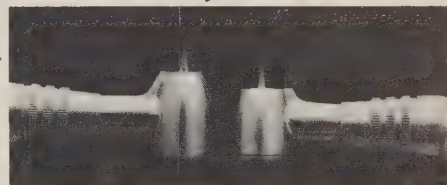
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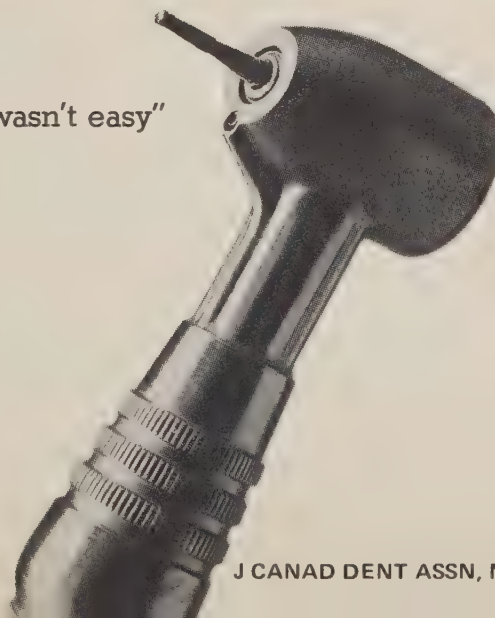


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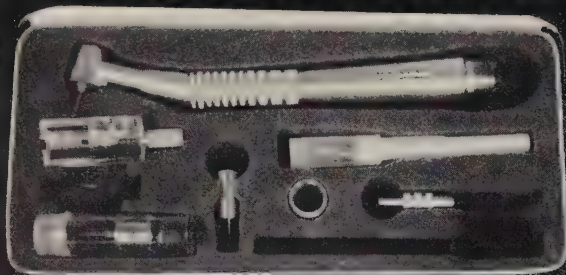
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Annotations

Textbook of Practical Oral Surgery

D. E. Waite. Philadelphia, Lea & Febiger, 1972. (Available from The Macmillan Company of Canada Ltd, Toronto) 567 p. Illus. \$21.00

The author defines the scope and objectives of oral surgery, and its relation to the education of the dental student. The importance of taking an adequate history, interviewing the patient, conducting an oral examination, and using laboratory aids in diagnosis is discussed. Operating room procedures and aseptic technique are described in detail, as are the instruments used for oral surgery. Other sections deal with inflammation, repair, infection, and how to provide supportive therapy before and after surgery.

There are detailed descriptions of tooth extraction, flap operation, alveolectomy, denture surgery, root recovery procedures, root resection and removal of impacted teeth. Other chapters deal with the maxillary sinus, soft tissue surgery, biopsy technique, cysts and tumours of the oral cavity, diseases of the salivary glands, temporomandibular joint disorders, developmental jaw deformities and fractures of the jaw. Included, too, are discussions on haemorrhage and shock and how to perform an emergency tracheostomy.

The Universal Orthodontic Technique

Jorge Fastlicht. Toronto, W. B. Saunders Company, 1972. 264 p. Illus. \$28.85

Dr. Fastlicht discusses the theory and practice of the universal appliance originated by S. R. Atkinson in 1928. Its principal elements are the bracket, the buccal tube, the lingual arch, the contraction coil springs and the auxiliary attachments used in conjunction with very light round, flat or combined wires. He concludes with a description of eight treated cases illustrating the clinical application of the procedures outlined.

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ALBERTA — Calgary. Modern air-conditioned, carpeted, Preventive Dental Practice for sale in an ideally located busy shopping centre. May be leased and/or financed. Sold as a going concern. Reply CDA Box No. 1285.

AUSTRALIA — Canberra. Established practice for lease or sale in big Canberra shopping centre. No opposition. Modern equipment. Enjoy Australia's sun. Reply Dr. R. Sandy, P.O. Box 110, Jamison Centre 2616, Canberra A.C.T., Australia.

BRITISH COLUMBIA — Very busy practice, established 8 years with well above average income and doing an ideal variety of dentistry. Area is a sportsman's dream in a city of 80,000 that is the centre of North America's last frontier. Dr. F. Dowe, 1669 Victoria St., Prince George, B.C.

BRITISH COLUMBIA — Vancouver. Beautiful office professionally designed and decorated. Two operatories, large private office. Busy patient load. Analgesia and very latest equipment. Very desirable area and location. Reply CDA Box No. 1296.

BRITISH COLUMBIA — Metro Vancouver. For sale — Two operator, sit-down family practice. New office lease negotiable now or participate in new doctor-owned building nearby. Heavy patient load, very much dentally conscious and receptive to prevention. Office two years old. Dentist leaving private practice. Reply CDA Box No. 1297.

ONTARIO — South River. Drawing area 5,000 plus, only dentist, preventive practice, 4 years old. Two rooms fully equipped for four-handed sit-down dentistry, private office, large business office, patient education room, homecare cubicles, panorex, central lab and sterilizing area, dark room. Owner returning to graduate school. Apply Dr. D. Chamberlain, Box 100, South River or call 705-386-2965.

ONTARIO — West End Toronto. Fully equipped and furnished dental office for rent in a modern medical clinic building; consisting of four operatories, nurse/receptionist station, private office and large waiting room. Central unit for gas analgesia fitted. Building fully air conditioned, janitorial services provided, ample parking. Reply CDA Box No. 1227.

ONTARIO — Lancaster. Available: office space in new air-conditioned Medical Centre situated on the St. Lawrence River, in prosperous rural community, 15 miles from Cornwall, 70 miles from Montreal. Older experienced dentist preferred. Country homes, excellent schools, churches, curling, riding, golf — 5 mile radius. Contact Lan-Char Medical Centre, Lancaster, Ontario. K3O 1N0.

ONTARIO — Stratford. Immediate sale of lucrative general practice in Southwestern Ontario city of 25,000. Modernly equipped one operator, room for easy expansion, excellent hospital privileges. Going back to school in September. Delayed take-over could be arranged. Best offer. Reply CDA Box No. 1306.

ONTARIO — Hamilton. For sale, busy general practice, established 1965. 600 square feet. Lease for 2 years, five years option at same rent. Waiting room, general office, private office with separate entrance, dark room, laboratory, two operatories — one incomplete. Owner moving because of family commitments. Reply CDA Box No. 1298.

ONTARIO — Mississauga. Dentist leaving province wishes to sell established 8 year old practice. Two operatories, well equipped, with central laboratory, reception room, business office and private office and dark room. Reply CDA Box No. 1304.

ONTARIO — Toronto. North Bathurst location. Prime location in prestigious medical building. Plumbed and partitioned. Equipment also available. Owner relocating. Phone: 416-636-2020.

ONTARIO — Huron County. 35 miles north of London on Highway 8. Area population 6,000. Modern (street level), new 2 chair general dentistry in broadloomed and panelled office. New hospital, 2 medical clinics. Privileges — low overhead, no outlay. Lease or sale. Health reasons. Phone 527-1530 or reply CDA Box No. 1231.

ONTARIO — Hamilton. Dentist's office for rent — reasonable low overhead. Rent \$125.00 monthly including equipment. Write or phone Dr. T. Siegel, 546 Barton St. E., Hamilton, Ontario, 529-1221.

ONTARIO — Ottawa. Dental suite for rent. 700 square feet. 21' x 34'. Air conditioned, reasonable rent, already 3 dentists located in small 4-office building situated in Ottawa South. Apply Dr. G. Bertrand, 1207 Evans Blvd. Ottawa, Ont. K1H 7T6 or call 731-5700 (area code 613).

ONTARIO — Mississauga (West Toronto). Choice practice and choice location. For sale. Reply CDA Box No. 1307.

ONTARIO — Excellent opportunity. Purchase established dental practice, or enter into an association in South Western Ontario city of 30,000. Present dentist returning to graduate school. Reply CDA Box No. 1279.

ASSOCIATESHIPS AVAILABLE

ALBERTA — Fort McMurray. An immediate opening available for an associate to join four-chair, fully equipped general practice. High annual gross and excellent percentage will be arranged with view to partnership. Population 8,500. Beautiful country, 285 miles north of Edmonton. One hour flight PWA from Edmonton. Apply Dr. D.E. Florence, Box 127, Fort McMurray or Telephone 743-2961 or 743-8107.

BRITISH COLUMBIA — West Kootenay. Full time associate required. Modern offices and equipment. Excellent hunting, fishing and skiing. Excellent opportunity for recent graduate. Reply CDA Box No. 1299.

ONTARIO — Toronto. Associate with view to partnership wanted for busy Metropolitan Toronto oral surgery practice. Reply CDA Box No. 1273.

ONTARIO — Windsor. Orthodontic associate required — long established practice in Windsor, Ont. Reply CDA Box No. 1293.

ONTARIO — Ottawa. Associate wanted to replace one dentist. Practice located with two other dentists in modern downtown office. Reply CDA Box No. 1300.

ONTARIO — Toronto. Oral Surgeon to join group oral surgery in Toronto. Association leading to partnership. Starting salary minimum \$30,000. Apply: Secretary, Oral Surgery, 168 Eglinton Ave. West, Toronto, Ont. M4R 1A7.

ONTARIO — Sudbury. One or two associates required for a busy group practice which includes one hygienist at present. Associate(s) should be interested in endodontia and/or Periodontia but may develop own general practice. Tremendous opportunity for one wishing to relocate or a new graduate. Reply CDA Box No. 1301.

ONTARIO — Thunder Bay. Oral surgeon desires associate for practice in Northwestern Ontario community. Excellent hospital and office facilities. Reply CDA Box No. 1302.

SASKATCHEWAN — Rosetown. An immediate opening is available for an associate to join a busy general practice. High annual gross and excellent percentage will be arranged. Fully modern office with six operatories, modern equipment and air-conditioned. Contact Dr. Stan Dovich, Box 1240, Rosetown, Saskatchewan. Phone 882-2123.

BRITISH COLUMBIA — Victoria. Urgently required — Associate or rental basis, with opportunity to share in dental building 8 years old. 5 chair office, 1 for hygienist, 2 for each operator. Long established practice — surplus of patients. Reply CDA Box No. 1261.

ASSOCIATESHIPS WANTED

ORAL SURGEON — Canadian born oral surgeon who has recently graduated, is Board eligible and certified, seeks associateship with a view to partnership in a major Canadian City, Reply CDA Box No. 1216.

BRITISH COLUMBIA — Full time associateship desired in Vancouver-Victoria area. 1974 University of Toronto graduate, age 27, married, desires associateship with possible view to partnership in growing modern group practice. Available June 1974. Will be in Vancouver during CDA Convention in October. Reply CDA Box No. 1289.

OPPORTUNITIES AVAILABLE

BRITISH COLUMBIA — Coquitlam. Dentist required for summer replacement from July 15 to August 30. Coquitlam office. Telephone 939-5333 or reply CDA Box No. 1292.

ONTARIO — Dental Hygienist required to assist in conducting and developing a new Preventive Dental Public Health Program in Kent-Chatham Health Unit area. Salary range \$7343 to \$8975 (to the end of 1973. Will be revised upwards in January 1974.), plus fringe benefits. Commencement date July 1, 1973. For further information please contact: Director, Public Health Dentistry, Kent-Chatham Health Unit, County Building, 435 Grand Avenue, West, Chatham, Ont.

ONTARIO — Dental Hygienist required for 1973-1974 school year, Borough of Scarborough — Health Department. Commencing September 4, 1973 to work in school programme of education and inspection during school days only. Starting salary up to \$7885 depending on qualifications and experience. Comprehensive range of fringe benefits available. Apply in writing only to the: Personnel Commissioner, Borough of Scarborough, 2001 Eglinton Avenue East, Scarborough, Ontario.

ONTARIO — Public Health Dentist. To replace retiring Director of Educational-Preventive Dental Programs for elementary school populations in four Northern Ontario Health Units. Requirements: Ontario license and diploma or degree in dental public health. To reside in Sudbury. Salary open and competitive. Comprehensive fringe benefits. Submit resume and application to: Dr. J.B. Cook, M.O.H., Sudbury District Health Unit, 1300 Paris Crescent, Sudbury, Ont.

NEWFOUNDLAND — Dentists required for service in Northern Newfoundland and Labrador. Please contact: Mr. Douglas Heath, International Grenfell Association, Room 701, 88 Metcalfe St., Ottawa, Ontario K1P 5L7.

YUKON TERRITORIES — Faro. URGENTLY REQUIRED. Dentist for mining town in Yukon Terr. Dental facilities available at no cost. Subsidized housing. Modern town all facilities. Excellent hunting and fishing. Annual earnings guaranteed. Write Dental Committee P.O. Box 280, Faro, Yukon Territories.

ANNOUNCEMENT

NOVA SCOTIA DENTAL ASSOCIATION



DR. D. ALAN STEWART

The Nova Scotia Dental Association announces the election of Dr. D. Alan Stewart of Windsor, N.S., as the president of the association for the 1973/74 term.

At the recent 83rd annual meeting, Dr. Stewart said that the association has advocated for a number of years the establishment of a childrens care program: he added that it was a great step for the government to have taken to include free dental care for 5 and 6 year olds.

Dr. Stewart succeeded Dr. Douglas Eisner, Halifax.

MANITOBA — Winnipeg. Oral surgeon certified to practise in Manitoba required for busy Winnipeg practice. Object partnership. Please submit qualifications and address to CDA Box No. 1165.

OPPORTUNITIES WANTED

WANTED — Locum for the month of November in Victoria. Reply CDA Box No. 1303.

GRADUATE — University of Toronto, 1965, is moving to Winnipeg and wishes to associate in modern family practice. Reply CDA Box No. 1305.

MCGILL GRADUATE — 1971 — experienced with locums available beginning August 1, licensed in Quebec and Alberta. Prefer Paedo, Surgery, some Endo. No prosthetics, dentist prevention orientated. Two assistants mandatory. Recommendations available. Rate: 60% of accounts receivable. Acceptable correspondence will be answered, collect. Write: 7137 Chester Ave, Montreal.

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WANTED: Used compressor. Reply in writing stating make, horsepower, condition and price. Also wanted: Harvey autoclave. C.L. Young, 223 Pembroke St. W. Pembroke, Ontario.

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EXCHANGE STUDENT

FRENCH-CANADIAN/ENGLISH EXCHANGE — B.C. dentist with 15 year old daughter invites 2 week youth exchange visit with French-Canadian dental family having daughter of similar age. Please write to Dr. Walter H. Sussel, 527 Machen Ave., Chilliwack, B.C.



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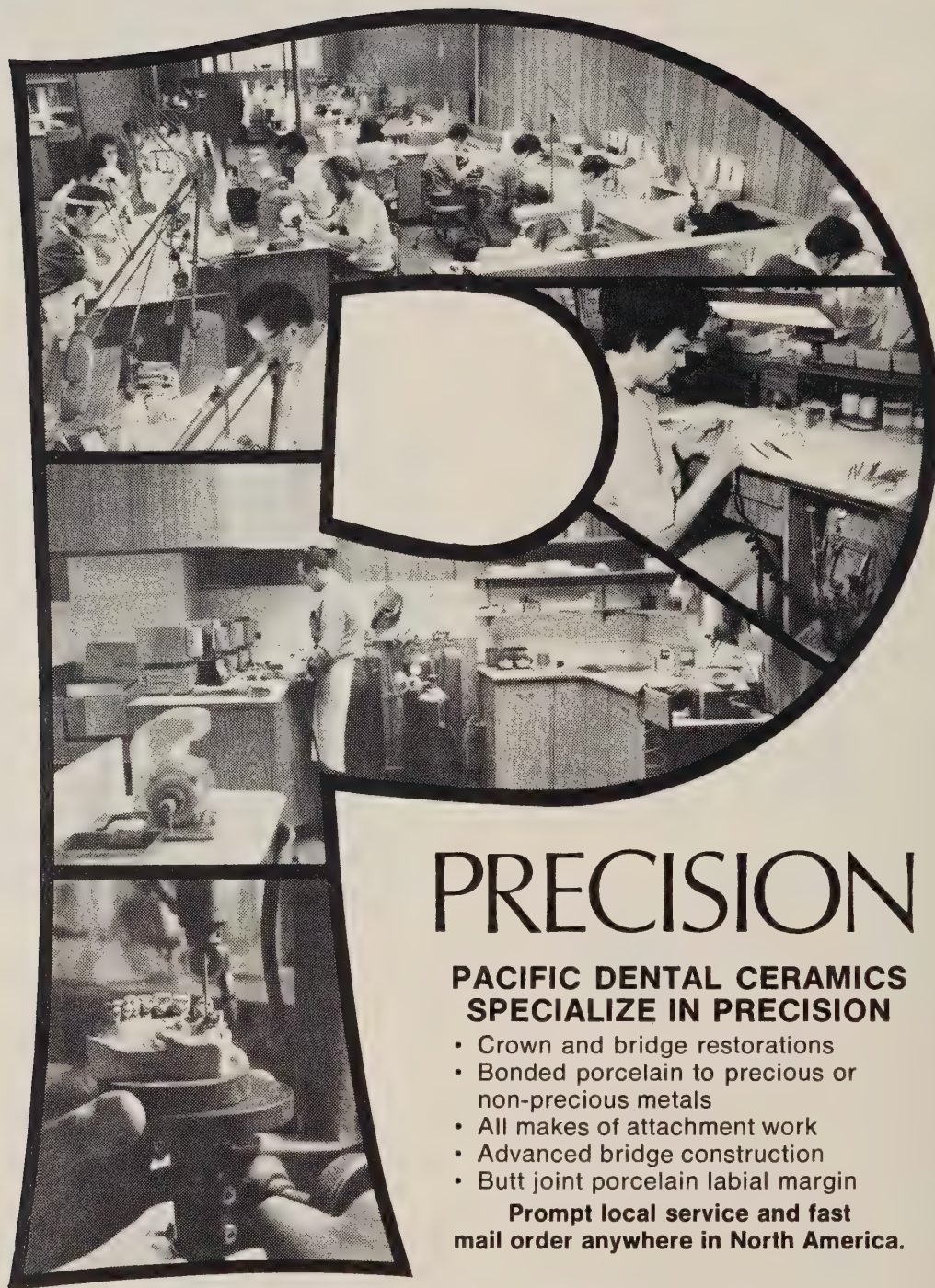
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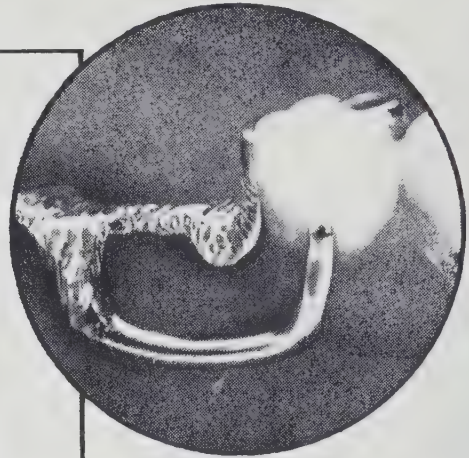
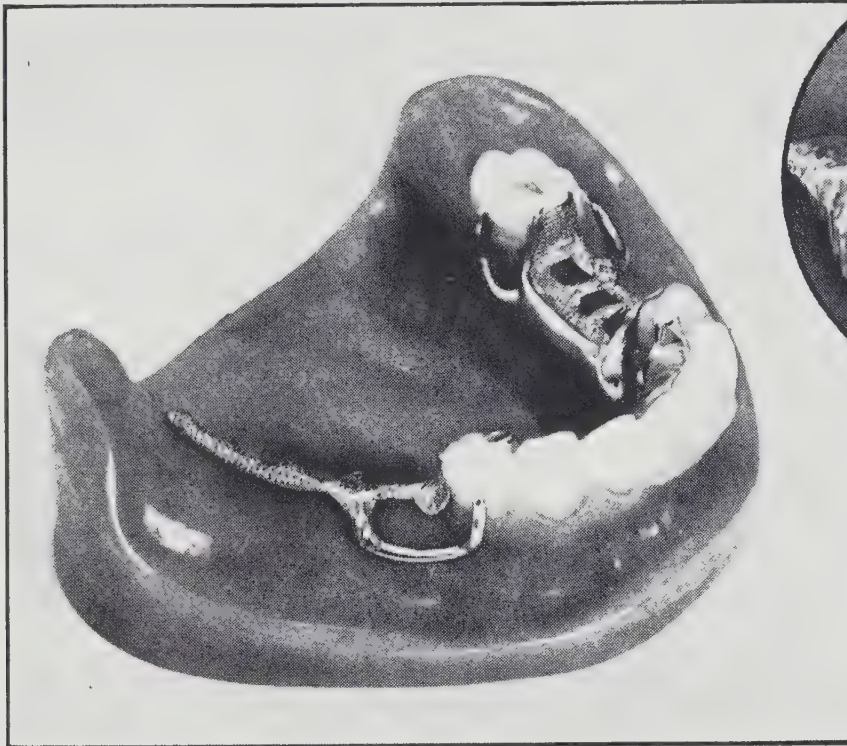
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REGISTRATION

CDA CONGRES NATIONAL ADC VANCOUVER OCT. 14 - 17, 1973 CONVENTION

CANADIAN DENTAL ASSOCIATION / L'ASSOCIATION DENTAIRE CANADIENNE

234 ST. GEORGE STREET / TORONTO / ONTARIO CANADA / M5H 1P2 (416) 961-1700

IMPORTANT: This form is to be completed by those desiring advance registration and accommodation in Vancouver during the forthcoming convention. Please mail the completed form, and, where applicable, your cheque for \$45.00, to the CONVENTION BUREAU at the above address. **To receive your choice of accommodation, register early! Preregistrations will not be accepted after the end of August 1973.** After August 31, please make your accommodation arrangements directly with the hotel of your choice, and register at the

convention registration facilities in Hotel Vancouver, upon your arrival. The general scientific sessions will be at both Hotel Vancouver and the Hyatt Regency Vancouver. The commercial exhibits and most section meetings will be in the Hyatt. Registration facilities, ticket sales, and most major social functions will be in Hotel Vancouver. These two headquarters hotels are very close to one another, on diagonally opposite sides of the same intersection.

Please PRINT or TYPE requested information:

DATE: _____

NAME: _____ If wife attending, name: _____
 surname given names

ADDRESS: _____

Executive or honorary status in provincial, state, national, or international organizations,

Specify: _____

Group affiliation: (e.g. CDA Section (specify), or Exhibitors)

Please indicate first, second and third choice of hotel accommodation in column entitled Choices.

CHOICES

- # _____ Hotel Vancouver
_____ Hyatt Regency Vancouver
_____ Hotel Georgia
_____ Bayshore Inn
☐ Accommodation not required

- ☐ Single
☐ Double Bed
☐ Twin Bed
☐ Suite (Specify Type)

ARRIVAL DATE _____

TIME _____

DEPARTURE DATE _____

TIME _____

NOTE: Hotels will not normally hold a room beyond 6 p.m. unless a later time is specified.

The registration fee for dentists is \$45.00. Dentists' wives may register without charge, as may exhibitors. Make your cheque payable to CDA National Conventions.

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INSCRIPTION

ADC CONGRÈS NATIONAL CDA VANCOUVER CONVENTION

Du 14 au 17 oct., 1973

CANADIAN DENTAL ASSOCIATION / L'ASSOCIATION DENTAIRE CANADIENNE
111 ST. GEORGE STREET / TORONTO / ONTARIO / CANADA / M5R 2P2 / (416) 962-3261

IMPORTANT: Cette formule doit être remplie par tous ceux qui désirent s'inscrire à l'avance et retenir une chambre pour le prochain Congrès qui aura lieu à Vancouver. Veuillez retourner cette formule dûment complétée ainsi qu'un chèque de \$45.00, au BUREAU DU CONGRÈS, à l'adresse ci-dessus. **Les meilleures chambres iront aux premiers inscrits! Les inscriptions prioritaires ne seront pas acceptées après août 1973.** A partir du 31 août, vous devrez faire vos réservations directement avec l'hôtel de votre choix et vous inscrire aux

guichets d'inscription du Congrès, à l'Hôtel Vancouver, à votre arrivée. Les séances scientifiques générales auront lieu à l'Hôtel Vancouver et à l'hôtel Hyatt Regency Vancouver. Les expositions commerciales et la plupart des réunions des sections auront lieu à l'hôtel Hyatt. Les Bureaux d'inscription, les ventes de billets et la plupart des fonctions sociales importantes auront lieu à l'Hôtel Vancouver. Ces deux hôtels qui serviront de centre principal sont très près l'un de l'autre, soit en diagonale en face de la même intersection.

Veuillez écrire en LETTRES MOULÉES:

DATE: _____

NOM: _____
nom de famille prénoms Nom de l'épouse si elle doit venir: _____

ADRESSE: _____

Fonction ou rang honoraire dans un organisme provincial, national, international ou d'état,

Précisez: _____

Appartenance à un groupe, précisez: (par ex. Section de l'ADC ou Exposants)

Veuillez indiquer vos trois premières préférences dans les listes intitulées Choix.

CHOIX

- # _____ Hôtel Vancouver
- # _____ Hyatt Regency Vancouver
- # _____ Hôtel Georgia
- # _____ Bayshore Inn
- ☐ CHAMBRE NON REQUISE

- ☐ Lit simple
- ☐ Lit double
- ☐ Lits jumeaux
- ☐ Suite (Spécifiez le genre)

ARRIVÉE, Date: _____
 Heure: _____
 DÉPART, Date: _____
 Heure: _____

AVIS: Normalement les hôtels ne retiennent pas une chambre après 6 p.m. exception faite sur demande.

Le prix d'inscription pour les dentistes est de \$45.00. Inscription gratuite pour les femmes des dentistes et les exposants. Rédigez votre chèque à l'ordre du Congrès National de l'ADC.

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JOURNAL

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Sept 1973/Volume 39/No 9

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La direction du Journal ne partage pas nécessairement les opinions qu'expriment ses collaborateurs à moins que l'Association Dentaire Canadienne ne les ait adoptées officiellement.

Announcements/Avis

Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1973 Vancouver, Oct 14-17
1974 Windsor, Ont. Oct 2-5
1975 St. John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1974 London, England, Sept 8-14
1975 Chicago, USA, Oct 26-30

Royal College of Dentists of Canada

Part I Examinations (Basic Sciences)
June 24, 1974. Applications and \$100 fee must be received before Mar 31, 1974.

Part II Examinations (Oral) Dec 6-7, 1974. Eligibility is based on successful completion of the Part I Examinations, plus submission of required case histories, and the lapse of five years since the candidate began his graduate training. Written intent to sit this examination with \$100 examination fee must be received before Mar 31, 1974.

Application forms for the Part I Examinations and further information may be obtained from J. E. Speck, Secretary-Registrar-Treasurer, Suite 614, 170 St. George St, Toronto, Ont M5R 2M8.

Canadian Meetings

Atlantic Provinces Dental Convention, at Charlottetown, PEI. Sept 16-19, 1973. S. G. Bagnall, PO Box 604, Halifax, NS.

Canadian Society of Oral Surgeons, at Mont-Gabriel Lodge, Mont Gabriel, Que. Oct 4-9, 1973. Pierre Surprenant, Suite 201, 230 King St W, Sherbrooke, Que.

Canadian Academy of Restorative Dentistry, at Vancouver, Oct 12-13, 1973. E. V. Gowda, Suite 201, 1590 Bellevue Ave, West Vancouver, BC.

Canadian Academy of Periodontology, at Vancouver. Oct 12-13, 1973. J. D. Stewart, 311 Rubidge St, Peterborough, Ont K9J 3P3.

Canadian Academy of Prosthodontics, at Vancouver. Oct 12-13, 1973. W. G. Woods, 123 Edward St, Toronto M5G 1E2.

Canadian Assn of Prosthodontists, at Vancouver. Oct 13, 1973. D.V. Chaytor, 5981 University Ave, Halifax, NS.

Canadian Association of Orthodontists, at Vancouver. Oct 13-15, 1973. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K 3M4.

Canadian Academy of Endodontics, at Vancouver. Oct 14-15, 1973. P.R. Dow, Suite 1009, 925 W Georgia St, Vancouver 1, BC.

Canadian Academy of Oral Radiology, at Vancouver, Oct 14, 1973. F. W. Musaph, Department of Oral Medicine, Faculty of Dentistry, University of British Columbia, Vancouver, BC

Canadian Society of Public Health Dentists, at Vancouver. Oct. 14-17, 1973. J. M. Conchie, 14265-56th Ave, Surrey, BC.

Canadian Dental Hygienists Association, at Vancouver. Oct 14-18, 1973. Linda J. Hunter, 3350 Cedar Crescent, Vancouver 9, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M.

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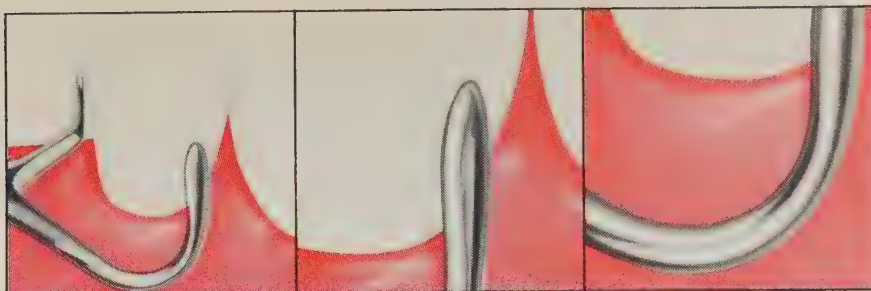
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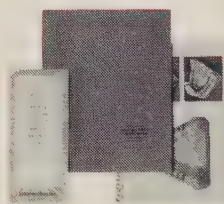
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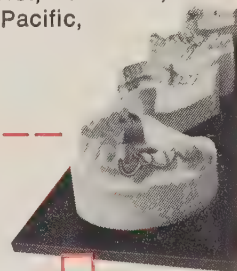
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Clasp Designs for Extension Base Partial Dentures, Lectures presented by A. J. Krol, D.D.S., 22nd Annual Seminar of the Group of Dental Studies, U.S.C. de Mexico, May, 1969.

Removable Partial Denture Design, Outline Syllabus, A. J. Krol, D.D.S., November, 1972, University of the Pacific, School of Dentistry.



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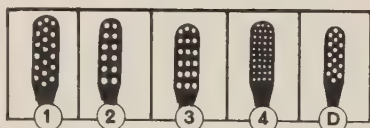
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Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catharine St W, Montreal 215, Que.

Newfoundland Dental Association, at Holiday Inn, St. John's, Nfld. Nov 7-10, 1973. Gordon Anthony, PO Box 9505, St. John's, Nfld.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

Vancouver & District Dental Society, at Hotel Vancouver, Vancouver. Dec 7-8, 1973. Vancouver & District Dental Society, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Winter Medical-Dental Assembly, at Mont Gabriel, Que. Mar 2-9, 1974. A. T. Wachna, 504 Medical Arts Bldg, Windsor 14, Ont.

Les Journées Dentaire du Québec, à l'Hôtel Bonaventure, Montréal. 1-3 mai 1974. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. May 1-3, 1974. Mr Bastien, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Hyatt Regency, Vancouver. May 1-4, 1974. College of Dental Surgeons of BC, Suite 325, 925 West Georgia St, Vancouver 1, BC.

Ontario Chapter, Canadian Society of Dentistry for Children, at Four Seasons-Sheraton Hotel, Toronto. May 12, 1974. A. F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 12-15, 1974. Mrs. W. C. Durham, 230 St. George St, Toronto Ont, M5R 2P1.

Alberta Dental Association, at Palliser Hotel, Calgary. May 29-31, 1974. J. R.

Duncan, 306, 1711 - 4th St SW, Calgary, Alta.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R. C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor, Ont. Oct 2-5, 1974. J. M. Conchie, 14265 - 56th Ave, Surrey, BC.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

Les Journées Dentaires du Québec, à l'Hôtel Bonaventure, Montréal. 30 avril-2 mai 1975. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. Apr 30 - May 2, 1975. Mr. de Bastien, 4290 Beaubien St E, Montreal 409, Que.

International Meetings

New Zealand Dental Association, at Queenstown, NZ. Sept 20-22, 1973. Alastair Murray, 69 Don St, Invercargill, NZ.

Japanese Association for Dental Science at Tokyo. Sept 22-26, 1973. J. Okamura, c/o Nippon Dental College, Fujimi, 1-Chome Chiyoda-ku, Tokyo, Japan.

First French Congress of Stomatology and Maxillofacial Surgery, at Paris. Sept 27-29, 1973. Secretariat Mme Palaysi Institut de Stomatologie, 47 blvd de l'Hôpital, 75013 Paris, France.

Portuguese Congress of Stomatology, at Lisbon, Portugal. Oct 17-20, 1973. Secretaria Geral do VI Congresso Português de Estomatologia, Av. R. Amélia-36-R/C, Dtº, Lisboa -5, Portugal.

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1. Barkley, Robert F.: Successful Preventive Dental Practices, Macomb, Ill., Preventive Dentistry Press, 1972, p. 211.

2. Goldman, H. M., et al.: Current Therapy in Dentistry, vol. 1, St. Louis, The C. V. Mosby Company, 1964, p. 64, 3. Goldman, H. M., and Cohen, D. W.: Periodontal Therapy, ed. 4, St. Louis, The C. V. Mosby Company, 1968, pp. 319-320.

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International Symposium on the Immunoglobulin A System, at University of Alabama, Birmingham. Oct 23-25, 1973. F. W. Kraus, Box 103, University Station, Birmingham, Ala 35294, USA.

American Academy of Periodontology, at San Antonio, Texas. Oct 24-27, 1973. American Academy of Periodontology, Room 924, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Argentine-Brazilian-Uruguayan Dental Congress, at Buenos Aires. Oct 28-31, 1973. S. A. Coninter, Reconquista 533, Buenos Aires, Argentina.

American Dental Association, at Houston, Texas. Oct 28-Nov 1, 1973. C. G. Watson, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Association of American Women Dentists, at Houston Oaks Hotel, Houston, Texas. Oct 30, 1973. Hazel F. Haughey, Cold Brook Rd, Wilmington, Vermont 05363, USA.

American Institute of Oral Biology, at Spa Hotel, Palm Springs, Calif. Nov 16-20, 1973. Membership Chairman, P.O. Box 897, Glendora, Calif 91740, USA.

Associação Paulista de Cirurgiões Dentistas, at Sao Paulo, Brazil. Jan 20-25, 1974. Dr. R. Todescan, 389 Bela Vista, Caixa Postal 2523-01321, Sao Paulo, Brazil.

Jamaica Dental Association, at Sheraton Kingston Hotel, Jamaica. Jan 27 - Feb 1, 1974. Keith E. R. Young, P.O. Box 19, Kingston 5, Jamaica.

Prosthodontic Society of South Africa, at Johannesburg, S. Africa. Apr 1-5, 1974. Congress Secretary, Private Bag 1, Houghton, Transvaal, S Africa.

German Dental Congress, at Hamburg, Germany. Apr 15-28, 1974. Bundesverband der Deutschen Zahnärzte e.V., 5 Köln 41, Postfach 410168, Germany.

International Conference on Oral Surgery, at Madrid, Spain. Apr 21-25, 1974. International Conference on Oral Surgery, PO Box 46078, Madrid, Spain.

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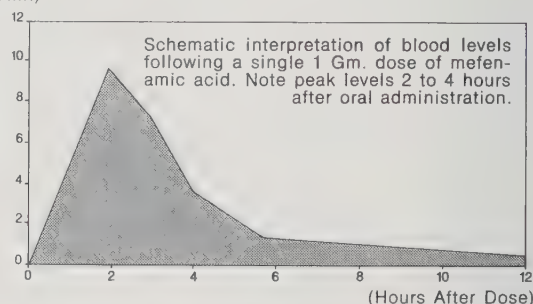
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Letters/Courrier

The journal devotes this section to comments by readers on topics of current interest to dentistry. The editor reserves the right to edit all communications to fit available space. Printed communications do not necessarily reflect the opinion or official policy of the Canadian Dental Association. Your participation in this section is invited.

Cette partie du Journal est consacrée aux communications des lecteurs sur les questions d'actualité dentaire. La rédaction se réserve le droit d'adapter les communications à l'espace disponible. Les communications publiées ne représentent pas forcément l'opinion ou la politique officielle de l'Association dentaire canadienne. Vous êtes invités à participer à cette section du Journal.

A message from CDA's Council on Insurance and Investment

During the past few months particularly, the CDA Council on Insurance and Investment has been made aware of several instances where members of the profession have been advised by independent insurance agents to cancel

their CDA group coverage and purchase individual plans.

Council and CDSPI have analyzed a number of the presentations made to members and have found that there were many misleading assertions and gross inaccuracies in the comparisons made.

The CDA Council on Insurance and Investment, needless to say, has a continuing interest in what the insurance industry has to offer. After careful analysis of several individual plans, Council is convinced that CDA Plans, both from the standpoint of cost and quality, are much superior to those offered on a commercial individual basis.

The CDA Plans were developed by dentists to meet the specific needs of dentists. The potential purchasing power of over 8,000 dentists, plus the security of substantial reserves, enables members to purchase a most attractive and beneficial insurance package at a reasonable premium.

Council urges that should you be advised to change your coverage by an agent, you should take the following three steps: (1) Ask him to put his comparison in writing. (2) Ask for a specimen policy. (3) Send the comparison and the specimen policy to CDSPI Administrator, Mr. Jackson, requesting an analysis.

The dental profession is a lucrative field for insurance agents who have been trained in a very efficient manner to maximize the benefits of their product and minimize that of the opposition. Because of the complexity of insurance contracts it is very easy for agents to distort facts to the point

where doubt is left in the mind of the potential purchaser.

In any case where doubt does exist, Council asks that you follow the steps listed above and contact Mr. W.E. (Gene) Jackson, Administrator, Canadian Dental Service Plans, Inc., 230 St. George Street, Toronto, Ont. M5R 2N5.

*David C. Way, DDS, MS
Chairman
CDA Council on Insurance
and Investment*

Government dental services

I would like to comment on the letter dealing with government dental services which appeared in the "Dialogue" section of the June 1973 issue of the Journal.

Dental public health officers in British Columbia share the concern of the authors of this letter in respect to the status of dentistry and the role of dentists within the Department of National Health and Welfare. Consequently, at the meeting of the Dental Health Officers Council of British Columbia held in Vancouver on May 9 and 10 of this year, an appropriate resolution was passed and forwarded to the Council of the College of Dental Surgeons of British Columbia. It is our hope that this Council will see fit to forward this or a similar resolution for consideration by the Board of Governors of the Canadian Dental Association at their next meeting.

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1. Wiesenbaugh, J.M., Jr. (Mar., 1971). 31(3):302.

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Severe infections: 300 mg (two capsules) or more every six hours.

Children (over one month of age)

Average infections: 10 mg/kg/day (5 mg/lb/day) divided into three or four equal doses.

Severe infections: 16 mg/kg/day (8 mg/lb/day) or more if indicated by the clinical situation, divided into three or four equal doses.

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Average infections: 12 mg/kg/day (6 mg/lb/day) divided into three or four equal doses.

Severe infections: 20 mg/kg/day (10 mg/lb/day) or more divided into three or four equal doses.

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Note: With β -haemolytic streptococcal infections, treatment should continue for at least 10 days to diminish the likelihood of subsequent rheumatic fever or glomerulonephritis.

Cautions: Generally well tolerated. Usual anti-*biotic* side effects — abdominal discomfort, loose stools or diarrhoea, nausea, vomiting. Transient neutropenia (leukopenia), or abnormalities in liver function tests have been observed in a few instances. Mild hypersensitivity reactions (skin rash and urticaria) have been observed on rare occasions.

Use with caution in patients with a history of asthma and other allergies. As with other antibiotics, periodic liver function tests and blood counts should be performed during prolonged therapy.

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Nevertheless, it is suggested that the criticisms against employment in government dental services do not in fact pertain to all such services. For example, in British Columbia there are already five salaries for dental officers dependent upon experience, specialist graduate training and responsibility. Of the staff of the Division of Preventive Dentistry of this province one dental officer has served 18 years, another has served 13 years, while still another has served 10 years. Of the two most junior officers in the department, one has four years of service behind him and the other has three. During the past 10 years they have contributed to the scientific literature of North America by publishing more than 30 papers.

In all matters relating to the profession and practice of dentistry in British Columbia the director of this division reports directly to the Deputy Minister of Health on day-to-day matters and, when policy decisions are involved, directly to the provincial Minister of Health. In addition, at the local level, it was recently agreed that dental public health officers of this division will have almost complete autonomy vis-à-vis their colleagues, the local medical officers of health.

Therefore, we would suggest that instead of discouraging "any graduate dentists to consider government services" that they be encouraged to investigate most carefully the conditions of employment in the particular government service to which they may be attracted.

*F. McCombie, LDS, RCS, DDPH
Director
Division of Preventive Dentistry
Department of Health Services and
Hospital Insurance
Victoria, BC*

the heads of medical services and, as should be, all are responsible to the Director General of Treatment Services. The Dental Service is autonomous within the departmental health team, establishing policies, regulations, staffing, statistics, etc., concerning dental treatment. Although responsible to the Director General, I have always, when the need be, had ready access to the Deputy and Assistant Deputy Ministers. On numerous occasions, in the absence of the Director General, I have been the senior professional person at head office. I have served on medical committees and have been executive secretary of departmental research and development of some years. I state most emphatically that medical and administrative officers have shown me and the dental service the utmost respect and co-operation.

Our clinics, for the most part, are located in veterans' hospitals, are of modern design and well-equipped. Our treatment policies are more comprehensive than other plans and our computerized statistical program is the envy of many foreign services.

Our dentists are career orientated and they find the opportunity to practise dentistry without pressure and restraint a very rewarding life. I defend them and the service in negating the inaccurate statements written by these authors as they apply to the Department of Veterans Affairs.

We are not as quoted "paramedical technicians."

*D. M. Tanner, DDS
Director of Dental Services
Department of Veterans Affairs*

Correction

I would like to correct a statement made in the article entitled "The endosseous blade implant: report of two cases" which appeared in the February 1973 issue of the Journal. The statement, on page 126, read: "They also receive 60 tablets of bromelains (Ananase) 500,000 units." The correct figure is 50,000 units.

*J.S. Druck, DDS
235 Dixon Rd
Weston, Ont*

I wish to reply to the comments of Curzon, Levesque and Bourne on Government Dental Services in "Dialogue" in the June 1973 issue. Their statements show perfunctory knowledge of dental services in the federal government. As Director of Dental Services, Department of Veterans Affairs, I can speak authoritatively for that department.

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EDITORIAL

Innovations in dental practice

Over its history the dental profession has adapted successfully to many socio-economic changes so that the modern practitioner can scarcely be recognized as having evolved from the early barber-surgeons. Widespread acceptance of the concept that adequate dental health care is a right of every citizen has raised serious questions as to how the profession's productivity can be increased to meet anticipated new demands.

It is our conviction that many ways to improve the availability of dental care have been, and are, being developed through the inventiveness and ingenuity of individual dentists across the nation. The time is ripe to look around us, without prejudice, and see which innovations appear to be most practical and beneficial. No single solution is likely to be found because problems of distributing dental care differ dramatically with circumstances, such as age, education, economics and geography.

This winter the Journal will carry a series of articles in which innovations in dental practice are described so that the profession can evaluate them. It is our hope that many others will volunteer to tell us of their own developments so that the vital communication needed to determine our best lines of action will begin.

The Journal is at the Profession's disposal; it will publish as much of the material it receives as space permits, in the form of articles, letters to the editor, dialogue or viewpoints. In this issue, as the opening gun, we publish the "viewpoint" of one of our more recent graduates, in which he sets forth some of his personal convictions regarding delivery of dental care. Whether the readers agree or disagree with the viewpoint expressed, it should be a stimulus to thought and provide some issues around which the needed dialogue can begin.

R.M.G.

(Continued from page 582)

International Congress on Dentistry for the Handicapped, at Amsterdam, Holland. Apr 22-24, 1974. M. M. Album, Medical Arts Bldg, Hillside Ave and York Rd, Jenkintown, Pa 29046, USA.

Asian-Pacific Dental Congress, at Jakarta, Indonesia. June 18-22, 1974. Dr. Yetty Rizali Noor, Faculty of Dentistry, Trisakti University, Grogol, Jakarta, Indonesia.

New Zealand Dental Association, at Auckland. Aug 26-30, 1974. General Secretary, New Zealand Dental Association Properties Ltd, PO Box 28084, Auckland 5, NZ.

Identification of cover photos

Top: Dr. Dennis Cavanaugh and his assistant escort two Indian children aboard the helicopter for a shuttle flight from the Dental Department at Moose Factory Hospital.

Centre: Community Medical Centre in Warkworth, Ont. was built with the voluntary contributions of citizens of the area. This centre now makes it possible for the community to enjoy the services of two physicians and a dentist.

Bottom: CNR pullman car is one of five mobile dental units operated by the Ontario Ministry of Health to provide dental care for children in remote areas of the province.

When Canadian dentists discovered

^N/_I **222** ^{/*} Tablets



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ever. Phenacetin-free, each tablet contains 375 mg. of acetylsalicylic acid, 30 mg. of caffeine citrate, and 8 mg. of codeine phosphate.

DOSAGE

One or two tablets as required.

CONTRAINDICATIONS

Sensitivity to any of the components.

PRECAUTIONS

Acetylsalicylic acid may depress the plasma prothrombin concentration. Care, therefore, should be exercised when acetylsalicylic acid and anticoagulants are prescribed concurrently.

Large doses of salicylates may have a hypoglycemic action. This may affect the insulin requirements of diabetics. Salicylates can produce changes in thyroid function tests, and slightly increase the renal excretion of uric acid.

Acetylsalicylic acid preparations should be used with caution in patients with peptic ulcer. Analgesic abuse (excessive and prolonged therapy) has been associated with renal nephropathy.

ADVERSE REACTIONS

Skin rash, gastrointestinal bleeding, headache, nausea, vomiting, constipation, vertigo, ringing in the ears, mental confusion, drowsiness, sweating and thirst may occur with average or large doses.

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(MC-240)

VIEWPOINT

Dental Auxiliaries

No army can withstand the strength of an idea whose time has come.

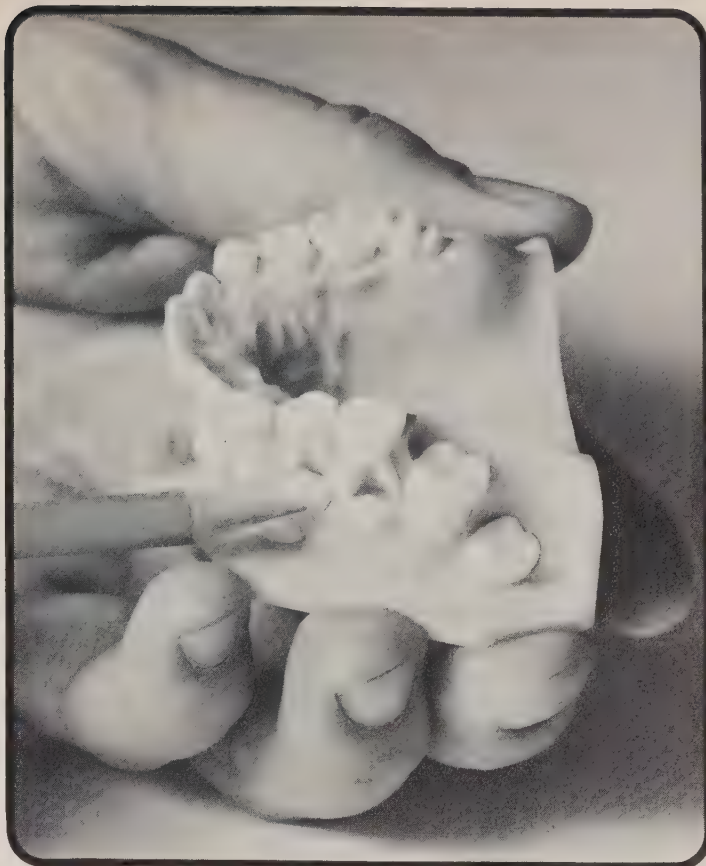
Victor Hugo

The time has come for the *extensive* delegation of our responsibilities in dental care. In fact, the most desirable evolutionary trend for Canadian dentistry is toward rapid establishment of community-orientated group practices which fully utilize dental auxiliaries in the provision of preventive dentistry. I am convinced that efficient privately-operated community clinics are best for the public and also for the dentists who are involved in them. The Assiniboine Dental Clinic in Winnipeg is a shining example of this fact (Shortill, W. W. J Canad Dent Ass 38:449, 1972).

The future objective of the dental profession can be stated simply: to provide more services to the public at lower cost while maintaining quality. The dental team concept of practice, utilizing auxiliaries to their fullest capacity, is the only way the dentists presently available can provide more services at a reasonable fee. To maintain the quality of services all auxiliaries must have passed rigorous training programs having a proper balance of the practical and the theoretical.

We have to give up our "cottage-dentistry mentality" and try to find more efficient methods for provision of dental care. Why shouldn't we delegate responsibilities to trusted and qualified auxiliaries? Our whole western civilization owes much of its growth to the principles of specialization and delegation (division of labour). Few people today repair their own car, television or house; build their own office or equipment; educate their own children; make their own clothes or raise their own food. Similarly, the dentist must delegate duties in his office to auxiliaries specializing in various tasks [i.e. gathering diagnostic data (RAD's, models, etc.), patient education (plaque-

(Continued on page 593)



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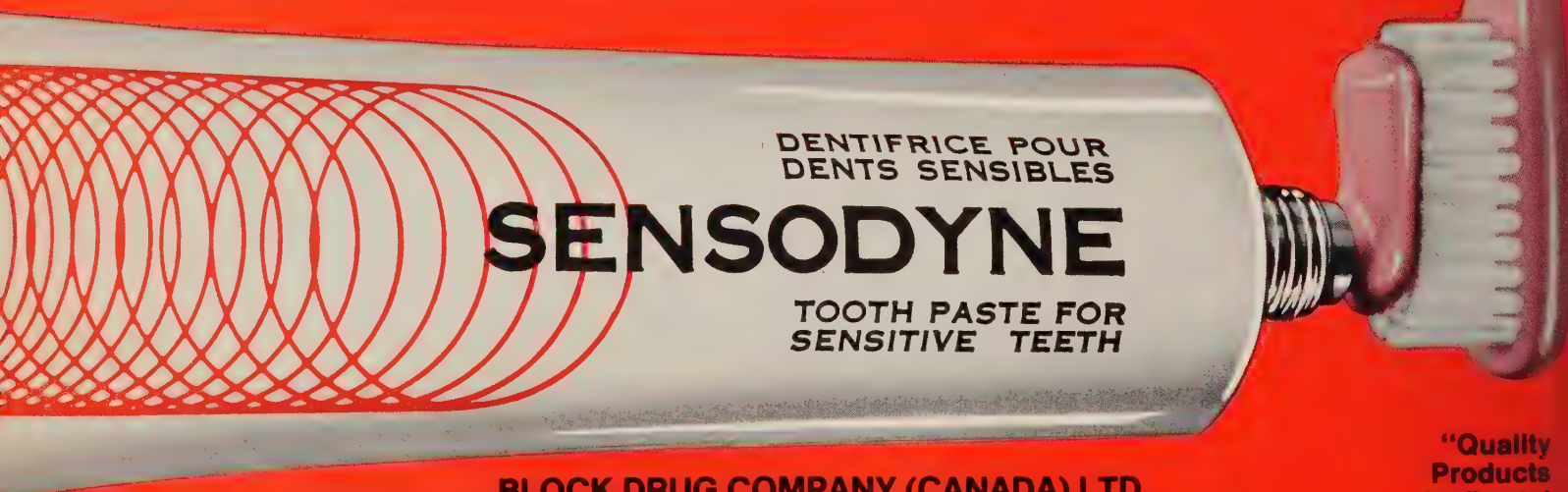
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VIEWPOINT
(from page 591)

control, post-op care) and in doing *all-reversible* procedures conceivable], which they can perform at less cost than could the dentist himself.

In the employment of auxiliaries, I suggest a pyramid system which provides for vertical mobility of individuals to levels of higher and higher responsibility as they improve their qualifications through experience and study. Thus dental office assistants could hope to become office managers; and chairside assistants could become hygienists or clinical therapists, etc. Such auxiliaries would be invaluable career members of the "dental team," trained to a varied but limited degree to perform specific levels of tasks in the clinic or dental office as delegated by supervising dentists and for whose performance the dentist would continue to be responsible.

The dental profession itself must take the initiative in establishing community dental clinics which are coordinated by dentists who employ the clinical and office management staff and determine office and clinical policy.

There must be new courses for supervisory clinicians, office managers, etc. who will become in demand. Health acts and regulations will need rapid and imaginative modification. Tax incentives must be provided to assist in raising capital funds. I do not believe that the politicians can be left to make right decisions in these areas. They must be led to believe that modernization of private practice care is the only efficient and desirable approach as compared to British-style socialization. However, our profession must show more unity, drive and leadership before the governments will seek our advice. For Canadian dentistry to have a healthy future, we, the profession, must provide imaginative, flexible, aggressive answers. Let's get moving! Margaret Atwood sums up our alternatives in one neat phrase: "only the dead remain in a fixed position."

*G.P. Greenacres, DDS
Canadian Forces Dental Services
CFPO 5000, CFB Europe No. 1 Dental Clinic (Lahr)*

The opinions expressed are those of the author and do not necessarily reflect the policy of the Canadian Forces Dental Services. Readers are invited to submit their own thoughts or comments on important professional issues to the Journal for publication as "Viewpoints." Space limitations force the editor to retain the right to edit or abridge material accepted for publication.



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INDICATIONS: Carbocaine (brand of mepivacaine) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS: Carbocaine is contraindicated in patients with a known hypersensitivity to the amide type local anesthetics or to methylparaben which is added to the multiple dose vial solutions.

WARNINGS: RESUSCITATIVE EQUIPMENT AND DRUGS SHOULD BE IMMEDIATELY AVAILABLE WHEN ANY LOCAL ANESTHETIC IS USED.

Usage in Pregnancy: Safe use of Carbocaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

Solutions containing a vasoconstrictor, particularly epinephrine or norepinephrine, should be used with extreme caution in patients receiving antidepressants of the triptyline or imipramine types or MAO inhibitors

because a severe prolonged hypertension may occur.

PRECAUTIONS: The safety and effectiveness of Carbocaine depend upon proper dosage, correct technique, adequate precautions, and readiness for emergencies.

The lowest dose that results in effective anesthesia should be used to avoid high plasma levels and serious undesirable systemic side effects. Injection of repeated doses of Carbocaine may cause significant increases in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slow metabolic degradation.

Tolerance varies with the status of the patient. Debilitated, elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their age and physical status.

Solutions containing a vasoconstrictor should be used cautiously in the presence of diseases which may adversely affect the patient's cardiovascular system. In persons

with known drug sensitivities or allergies Carbocaine should be used cautiously.

Serious cardiac arrhythmias may occur if preparations containing a vasoconstrictor are employed in patients undergoing or following the administration of chloroform, halothane, cyclopropane, trichloroethylene, or other related agents.

ADVERSE REACTIONS: Adverse reactions result from high plasma levels due to excessive dosage, rapid absorption, or inadvertent intravascular injection. Hypersensitivity, idiosyncrasy, or diminished tolerance may also be the cause of reactions. Reactions due to overdosage (high plasma levels) are systemic and involve the central nervous system and the cardiovascular system.

Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may be followed by drowsiness, convulsions, unconsciousness, and possibly respiratory arrest.

of the procedure
takes 15 minutes...

Why should
the thaw take so
much longer?



Reactions involving the cardiovascular system include depression of the myocardium, hypotension, bradycardia, and even cardiac arrest. Treatment of a patient with toxic manifestations consists of maintaining an airway and supporting ventilation using oxygen, and assisted, or controlled respiration as required. Supportive therapy of the cardiovascular system consists of using vasopressors, preferably epinephrine. Convulsions may be controlled by the use of oxygen. If convulsions persist, the intravenous administration in small increments of an ultra short-acting barbiturate (i.e., thiopental, thiamylal) may be used. If these are not available, a short-acting barbiturate (secobarbital, pentobarbital) may be used. Intravenous barbiturates should only be used by those familiar with their use. Allergic reactions are characterized by cutaneous manifestations of delayed onset, or urticaria, edema, and other manifestations of allergy. The detection of sensitivity by skin testing is of doubtful value.

DOSAGE AND ADMINISTRATION: As with all local anesthetics the dose varies and depends upon the area to be anesthetized, vascularity of the tissues, individual tolerance and the technique of anesthesia. The lowest dose needed to provide effective anesthesia should be administered. For specific techniques and procedures refer to standard dental manuals and textbooks.

For infiltration and block injections in the upper or lower jaw the average dose of 1 cartridge will usually suffice. Each cartridge contains 1.8 ml. (36 mg. of 2% or 54 mg. of 3%). This dose may be doubled if necessary to effect anesthesia. The maximum dose should not exceed 3.6 mg. per pound of body weight.

Any unused portion of a cartridge should be discarded. **HOW SUPPLIED:** Carbocaine (brand of mepivacaine) HCl 3% without vasoconstrictor—each ml. contains: Carbocaine HCl, 30.0 mg.; sodium chloride 3.0 mg.; and water for injection. Methylparaben 1.0 mg. is added to the

solution and pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Carbocaine HCl 2% with Neo-Cobefrin (brand of levonordefrin) 1:20,000—each ml. contains: Carbocaine HCl 20.0 mg.; Neo-Cobefrin, 0.05 mg.; sodium chloride 4.0 mg.; acetone sodium bisulfite, not more than 2.0 mg.; and water for injection. Methylparaben 1.0 mg. and sodium lactate 1.0 mg. are added to the solution and the pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Both formulas are available in 1.8 ml. cartridges, cans of 50, to fit the Carpule[®] Aspirator; and in 50 ml. multiple dose vials.

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Consider these two facts:

1. Most of today's dental procedures are brief. Patients dislike having their faces numb for hours after they've left the office.

2. The modern local anesthetic solution—Carbocaine 3%—provides unsurpassed anesthesia that allows ample time for routine procedures, an average of 20 minutes operating anesthesia in the upper jaw and 40 minutes in the lower, but doesn't linger a great deal longer than necessary.

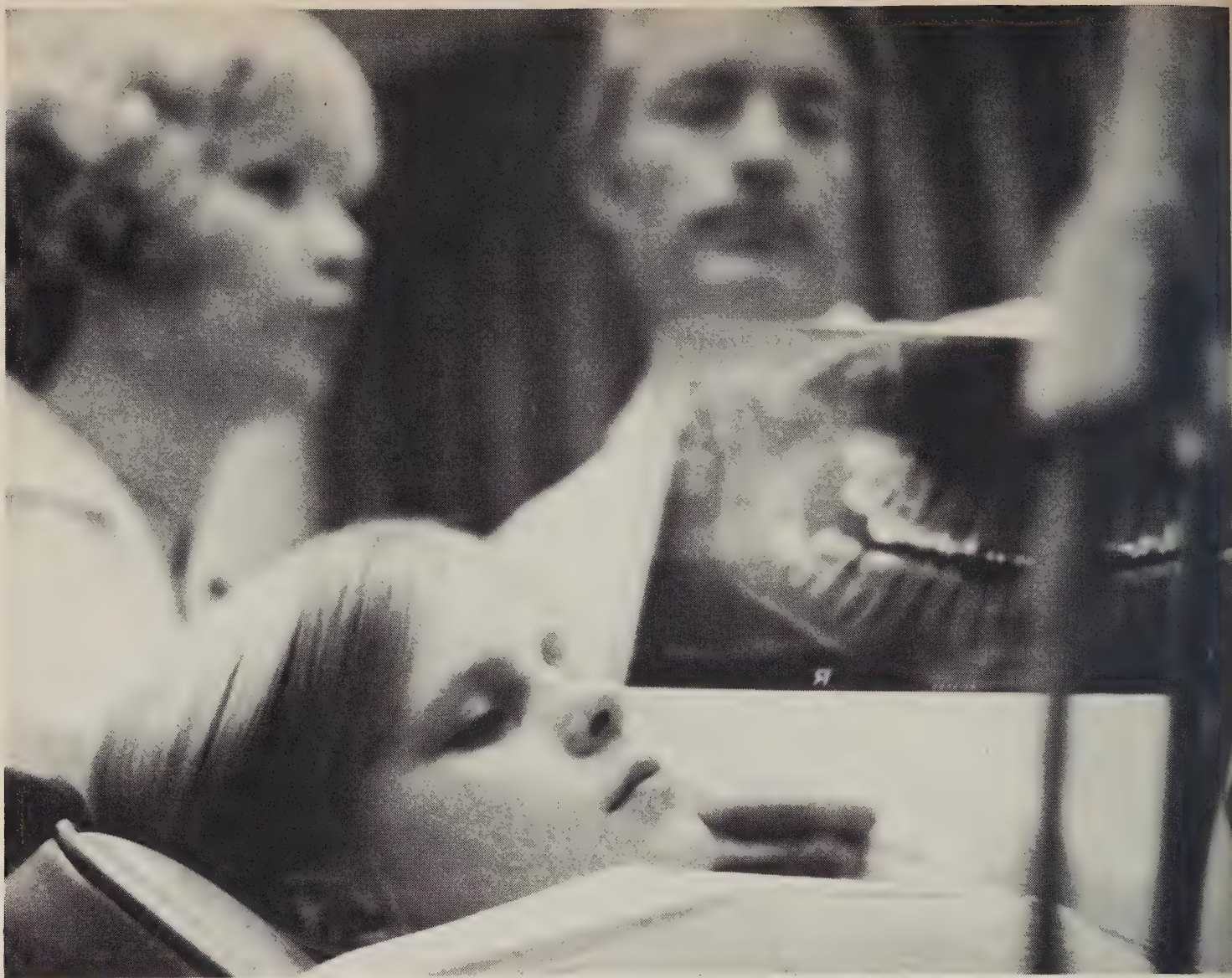
Carbocaine 3% adds this important dimension to patient comfort because it is fully effective by itself, without any help from a vasoconstrictor.

For longer duration, Carbocaine HCl 2% is combined with Neo-Cobefrin[®] (brand of levonordefrin) 1:20,000, a vasoconstrictor more stable than epinephrine and less potent in raising blood pressure.

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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

More on CDA services and programs

Last month I introduced the Association's communication services by mentioning those directly related to the library. There are many others:

Educational pamphlets

These are written, designed and printed by CDA staff and are made available, at cost, to dentists and dental associations for use as educational hand-outs to dental patients and to groups involved in dental public health programs. They are available in both English and French. The present library consists of 13 different pamphlets covering a broad spectrum of topics related to dental health care. New pamphlets are being developed on a regular basis to meet requests for this type of service. Last year more than one million of these educational pamphlets were distributed from CDA headquarters.

Educational films

As the Association's finances permit, films covering a variety of topics, from recruitment to cancer detection, are procured and made available on loan at no cost to both public and professional groups. Although our film library is still very limited it is growing gradually. This year, in fact, two new films

— one on dental pain and the other on plaque control — will be added.

These educational pamphlets and films are catalogued and lists of those available from the CDA can be obtained on request.

TV film clips

Most of you will have occasionally noticed a 30 or 60 second film on your TV screen bearing the CDA logo and carrying a message about dental health. For several years, the Association has been building a library of these short film clips and distributing them to TV stations all across Canada to be run as public service presentations. In this way, the profession gains hundreds of thousands of dollars worth of free advertising each year. The cost of producing these films varies considerably depending on the technique used: i.e. live subjects as opposed to cartoon drawings; silent films as opposed to those using voices. In any case, they usually cost several thousand dollars and need to be replaced frequently because TV station programmers are always looking for material that is new and different.

Spot radio messages

Short radio messages on dental health are similarly prepared and distributed to radio stations across the country. These, of course, are in both French and English and are used at the discretion of the radio station operators as fill-ins.

Dental columns in weekly newspapers

There are about 600 weekly newspapers in Canada. CDA has offered to provide them, free of charge, with a weekly dental column ("Dental Topics" is the title) bearing the name of the Association. Each column has had its scientific content checked by a dentist and is written to appeal to the interests of readers of these newspapers. Approximately 225 weekly papers now subscribe to this service and the total readership is estimated at about one million people.

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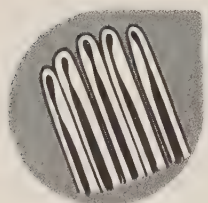
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Dental columns in daily newspapers

A question and answer column on dental health now appears each week in *The Toronto Star* as a public service from CDA. The scientific content is provided by a competent and generous member of the Association on a voluntary basis. Negotiations are presently underway to make this column available to other daily papers across Canada as soon as possible. Questions from readers which cannot be suitably answered in the newspaper column are all answered on an individual basis. In addition, CDA educational pamphlets are mailed out to readers requesting them.

CDA cassette continuing education program

This program has been in operation a little over a year. Through a monthly edition of an audio cassette accompanied by a visual supplement, subscribing dentists are provided with the most up-to-date information on various aspects of dentistry.

A competent editor, supported by an editorial advisory committee made up of experts in the field of education, select the scientific material and see that it is properly edited for use on the cassettes. The objective is to serve the dentists' interests by providing concise, up-to-date reports on a wide range of techniques and other dental topics.

The cassettes are produced and distributed by Medifacts Limited of Ottawa.

Well over 1,000 English subscribers are taking advantage of this service at the present time. The service will also be available in French as soon as there are 200 French subscribers.

Question No. 4

The Association's activities in the areas outlined above are designed to serve the members of the profession and the public. If these services were not provided on a national basis, they might not be provided at all; or they might be available only in isolated areas; or, if they were to be provided by each province, there would be great duplication of effort across the country.

Do you think service programs such as are presently being provided to the profession and the public through educational pamphlets, TV film clips, radio messages, dental columns in daily and weekly newspapers and the CDA cassette program are programs which should be provided by the Association? Please give reasons for your "yes" or "no" answer.

THE PERFECT TEAM

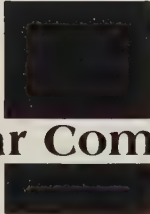
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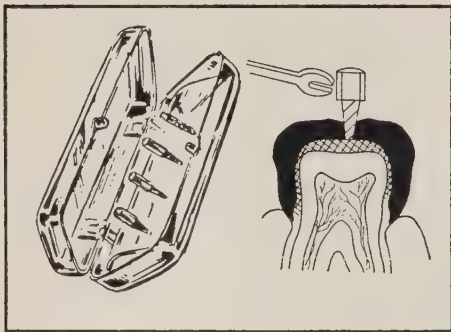
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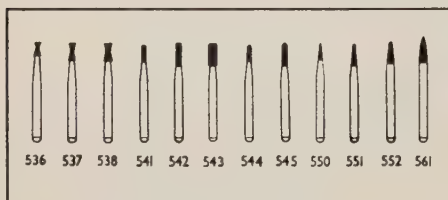
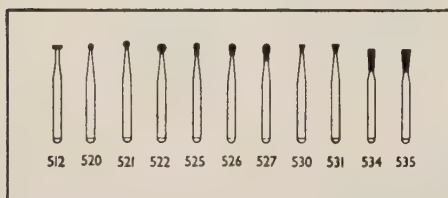
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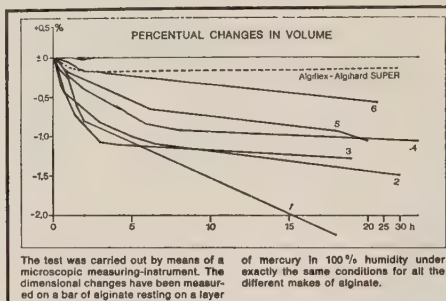


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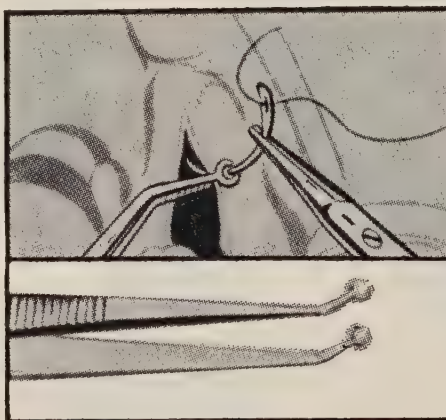


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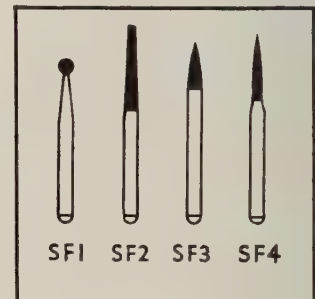
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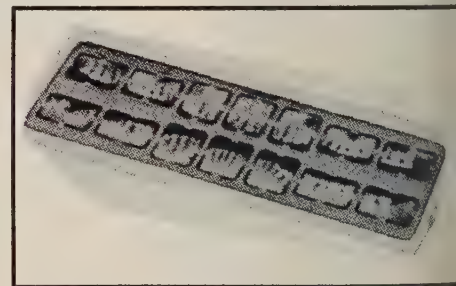
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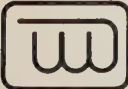


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Dentistry in the news

National Convention

Dr. Peter Banks to discuss acupuncture at CDA Convention

A major highlight of the scientific program at this year's CDA National Convention will be a session on acupuncture presented by Dr. Peter Banks, president of the Canadian Medical Association.

Dr. Banks was a member of the Canadian medical delegation which visited the People's Republic of China this spring. The delegation, organized by the Canadian Medical Association, spent 15 days, April 20 to May 5, in Peking, Shanghai, Shih Chia Chuang, Canton and surrounding areas. Priority visitations included medical schools, hospitals, research institutions and medical clinics in factories and on farm communes. During the trip, members of the delegation witnessed the practice of medicine in the familiar western style as well as in the traditional Chinese style. As might be expected, the doctors were particularly interested in the opportunity to view first hand various surgical procedures using acupuncture analgesia.

Dr. Banks will describe, during his presentation at the convention, several of the procedures he witnessed which used the technique of acupuncture. These procedures included a Caesarean section, a gastrectomy and the removal of a brain tumour. He also saw a film of open heart surgery under acupuncture. During one operation, involving the removal of a pituitary tumour, the patient was talking to the visiting doctors as the neurosurgeons were working inside his skull. Dr. Banks has pictures of the patient's blood pressure

and pulse chart which, he says, remained steady throughout the surgery.

Dr. Peter Banks was born in England, educated at Epsom College and St. Bartholomew's Hospital. He did his postgraduate study at St. Bartholomew's Hospital and in 1953 moved to British Columbia to accept an appointment at St. Joseph's Hospital, Victoria, now the Victoria General Hospital. In that hospital he built up an intern training program, which is frequently used as an ideal model of such programs in a community hospital. He was the first physician in Victoria to restrict his practice solely to consulting medicine and has recently been the chief of staff at the Victoria General Hospital.



Dr. Peter Banks

He was on the Executive Committee of the B.C. Medical Association for 10 years and, as its president, in 1964 was responsible for leading the profession into an agreement with the B.C. government resulting in the subsequent formation of the British Columbia Medical Plan. He was then appointed as director of this plan and later as the first medical member of the Medical Services Commission, which was instituted to combine the provision of all the medical services of British Columbia under the Federal Government Act.

He has served the CMA in many capacities. He was a member of the first Canadian Delegation to study the Australian Health Services in 1961. He has served on the Economics Committee and the Executive Committee and has recently been deputy speaker of the General Council of the Association.

He has served on many committees set up by the University of British Columbia and the Government of British Columbia to study such subjects as the provision of coronary care units and chronic renal dialysis centres, and at the present time he is Chairman of the Committee on Open Heart Surgery and of the Special Medical Review Board to the Minister of Health.

The Association

Resolutions from Quebec's College of Dental Surgeons vital to future of CDA

Two major resolutions, approved by the Board of Governors of the College of Dental Surgeons of the Province of Quebec in June, 1973, will be presented to the CDA Board of Governors during its annual meeting in Vancouver, October 11-13. The first resolution constitutes the Quebec Board's endorsement of the report of its executive council's sub-committee on the status of membership in the Canadian Dental Association. The second requests that a copy of the sub-committee's report be forwarded to CDA, along with a request that the Association change its constitution and



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Dr. E. N. Daver (left) of Shaunavon, Saskatchewan, and Dr. Guy Lalande of Montreal, get a preview of a new poster produced by the American Society of Dentistry for Children between sessions of the 1973 ASDC Seminar on Pedodontics, July 22-26 in the ADA Building, Chicago.

of Dentistry, University of Toronto in 1950 and established a general practice in Ottawa. In 1958, he was named president of the Ottawa Dental Society.

Canada and the Provinces

Denturists advised to reconsider refusal to take exams in September

Ontario's Health Minister, Dr. Richard Potter, has advised the members of the Denturist Society of Ontario to reconsider carefully their decision to refuse to take the examinations scheduled for September which are designed to test their competency as denture therapists.

On July 6, the provincial government proclaimed the Denture Therapists Licensing Act which allows qualified dental technicians to work directly with patients, but under the supervision of a dentist. After September only technicians who have passed an examination will be permitted to practise as denture therapists. Anyone found dealing with the public without passing the examination, obtaining a licence and working under the supervision of a dentist will face fines of up to \$2,000 or six months in jail.

Following proclamation of the law, the Denturist Society sent a letter to Premier William Davis stating their refusal to take the examinations. The letter, signed by Gordon M. Smith, public relations counsel for the group, said the denturists would not apply to take the examinations "if there are no assurances either from your office or the office of the minister of health that denture therapists who qualify for licences will be permitted to practise without the control and supervision of dentists...since none believe they can effectively function in a role bordering on complete subservience to the profession."

Dr. Potter stated that he felt the members of the Denturist Society had been ill advised in deciding not to try the examinations and asked them to

bylaws accordingly. CDA received this material June 28.

The recommendations outlined in the report of the sub-committee on the status of membership in the Canadian Dental Association are of vital importance to the future of the Association. These eight recommendations, unanimously approved by the members of the sub-committee, are as follows:

1. that the College of Dental Surgeons of the Province of Quebec remain a "corporate" member of the Canadian Dental Association with the aim of representing the Quebec dental profession;

2. that every dentist in Quebec may join the Canadian Dental Association in an individual and voluntary way;

3. that the by-law of the Canadian Dental Association under which the annual fee was established on a "per capita" basis, be repealed;

4. that the College of Dental Surgeons of the Province of Quebec commit itself financially only for the year 1974-75 from the viewpoint of contributing to CDA;

5. that the College's contribution to CDA be \$45,000.00 in 1974-75;

6. that it be the responsibility of CDA to do its own advertising to our members;

7. that all College representation in CDA be chosen from members of the Provincial Board so as to establish a certain control over the quality and efficiency of its representatives;

8. that in its 1974-75 budget the College take into account the reduction of its contribution to CDA especially as regards the amount of the College's annual fees from its members.

The sub-committee was made up of Dr. Jacques Fiset, Dr. Sidney Silver and Dr. Marc Trépanier.

CDA names representative to penitentiary service

Dr. David K. Peters, president of the Canadian Dental Association, has appointed Dr. J.R. Callingham of Ottawa to represent the CDA on the National Health Services Advisory Committee for the Canadian Penitentiary Service.

Dr. Callingham was born in Oakville, Ont., and served with the Royal Canadian Air Force from 1940 to 1945. He graduated from the Faculty

seriously reconsider the consequences of this decision should they wish to practise after September.

The key issue, according to the health minister, is "to ensure that the public is well served by qualified denture therapists." He noted that the results of the first set of examinations suggest that concern for the public's well-being was not misplaced. Of the 57 denturists who tried the examination, only 33 passed; a failure rate of 42 per cent.

Refresher courses have been set up for individuals wishing to prepare themselves for the examination and Dr. Potter has urged all those who wish to practise denture therapy to become qualified.

The Minister also said that he is encouraged by the response of the Ontario Dental Association to his letter of July 5, urging them to recognize their responsibilities for providing dentures at reasonable cost to the public.

Dr. Potter refuted the denturists' claim that a so-called oral certificate of

health is sufficient protection to the public. He said this claim is totally misleading and ignores the potential dangers the public could face should they be fitted for dentures without the supervision of a dentist.

"To support their claim," the Minister said, "denturists often refer to the fact that some other provinces permit an oral certificate of health. This claim completely overlooks the less than satisfactory experience which some of these provinces have had in ensuring that an oral certificate is actually issued."

The Minister added, "We have in this province some of the finest health care in Canada. I do not want that quality undermined and I will not turn my back on my responsibilities for the health of the people of this province. To appease this group, which refuses to become qualified in order to get their own way, would be the height of irresponsibility," Dr. Potter added.

"The Denturist Society cannot set itself up as a law unto itself," the Minister said. "What is at stake here is

the public's well-being and we will not be blackmailed by those who do not wish to become qualified."

The Minister also advised that arrangements are being made now to ensure that low cost denture therapy services to the public will be available regardless whether the implied threat to withhold service is carried out.

Manitoba children's dental care program

The preliminary report is to be completed by the end of October for the establishment of a prevention-oriented children's dental health care program covering children up to 12 years of age in Manitoba.

Development of the program has been the responsibility of the Department of Health and Social Development in collaboration with the Dental Health Committee. Non-governmental representation on the Committee came from the Manitoba Dental Association,

Clinical Dentist: \$17,600 - &22,500 **Dental Assistant: &6,900 - \$7,500**

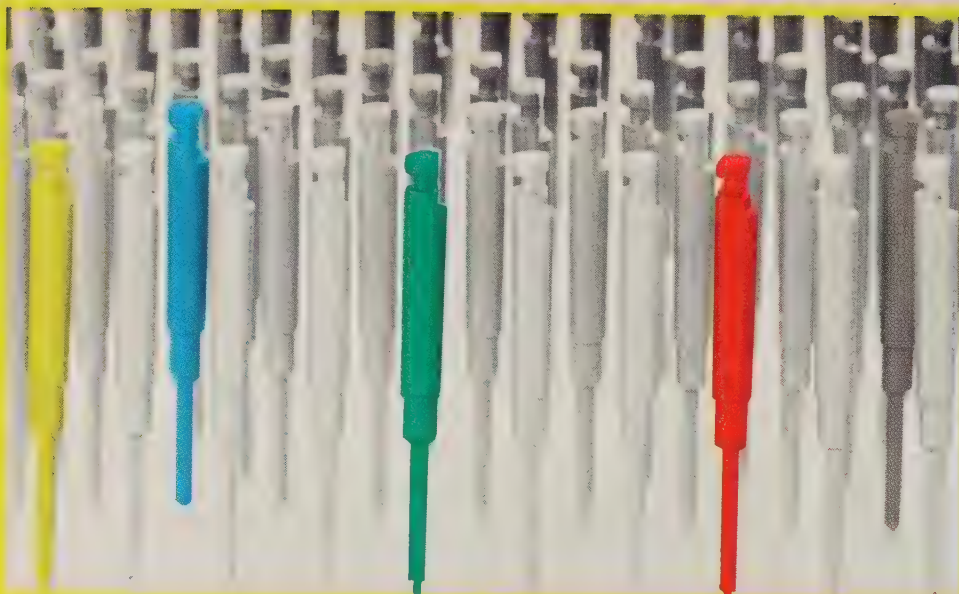
The MINISTRY OF HEALTH seeks either a Dentist, or a husband and wife team, to serve the Railway Dental Clinic operated by the province in Northern Ontario. The successful candidate(s) will provide preventative care and treatment for pre-school and school-age children. Benefits include sick leave and vacation credits plus annual salary increments. Please note that these positions will be on a contract basis.

Qualifications: the dentist must be licensed to practise dentistry in Ontario and have proven ability to provide dental care for children. The dental assistant should preferably have some experience as an assistant to a dentist.

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the Faculty of Dentistry, University of Manitoba, the School of Dental Hygiene, the Manitoba Dental Hygienists Association, and the Manitoba Dental Nurses and Assistants Association.

Much attention has been given to optimizing the utilization of all levels of dental health personnel with reference to the logistic problems in each part of the province. Careful analysis is also being done on the relative effectiveness of each service component.

Newfoundland dentists see no great demand for denture services

There is no great demand for denture services in the city of St. John's, according to a brief presented by the Newfoundland Dental Association to the province's select committee investigating denturists.

The brief, presented by Dr. Gordon Anthony, pointed out that 38 dentures were made at the association's new low cost denture clinic set up in St. John's during its first four weeks of operation. Dr. Anthony said that many patients who attended the low cost clinic did not want a "cheap" denture and pointed out that even the reduced fee was too high for some. He suggested that the government should sponsor and subsidize a clinic staffed by adequately trained personnel for people in the low income bracket.

The NDA said that the overall demand for dentures is declining as a result of more widespread dental care. However, the association noted that there is still considerable demand in rural areas where dentists are dependent to a large extent on dentures to earn their living. It warned that "if the dentists' professional service was undermined by unqualified practitioners (denturists) they would be forced to leave the rural areas and seek their livelihood in the larger urban centres."

The NDA brief said that any type of health service could be reduced in cost by substituting less qualified personnel but noted that such an approach would be seriously detrimental to the health of the people in the province.

Dr. Anthony stated that there are two essential criteria for any public health service: qualified personnel and economically acceptable cost. He said the dental association's low cost denture service meets both these criteria.

He called on the provincial government to establish diploma courses to train dental auxiliaries for expanded duties, explaining that this would be the best approach to alleviating the shortage of dentists. More auxiliary personnel would enable dentists to spend more time on restorative and preventive service.

The Association's brief also proposed a government-sponsored dental recruitment program to bring more dentists to Newfoundland.

"Through these steps," Dr. Anthony explained, "the dental needs of all Newfoundlanders can be met without lowering standards and resorting to inferior treatment."

International Items

Variety is key to ADA Annual Session

A wide range of subjects — from practice administration to electrosurgery to tooth implantation — will be discussed during the scientific program of the 114th annual session of the American Dental Association in Houston, October 28 to November 1, 1973.

More than 800 essays, scientific session lectures, exhibits, table clinics and films will be presented during the four day program.

Experts in many fields will hold seminars on such topics as dietary guidance for the home and dental office, surgical endodontics, operative dentistry for the paedodontic patient and modern restorative materials. Several speakers are lined up to discuss practice administration — team building, partnerships and group practice. An added attraction will be a cardiopulmonary resuscitation demonstration for the practising dentist, sponsored by the American Heart Association. A special booth showing plaque control programs will emphasize the need for prevention in dentistry.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on July 31, 1973:

Guaranteed Fund \$10.301;

Fixed Income Fund \$13.891;

Common Stock Fund \$30.544.

Total assets (market value) of the plan were \$16,216,313.40.

The following purchases and sales occurred during the preceding month: bought, 11,294 CIF Conventional Mortgage Fund units; 1,600 shares Canada Permanent Mortgage Corporation; and 1,300,000 Aluminum Company of Canada note. Sold, 1,300,000 Aluminum Company of Canada note.

Sure cure?

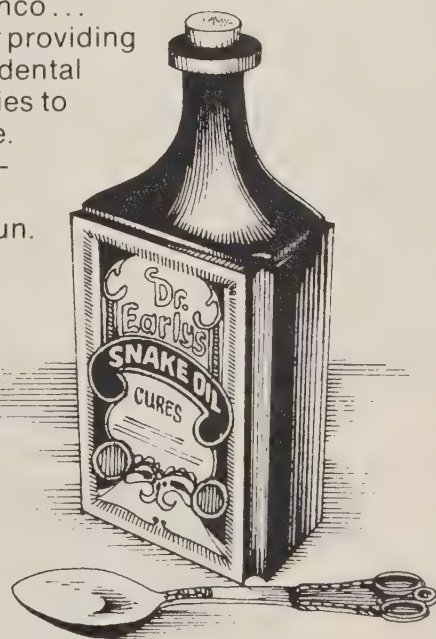
Ever think of the risks you take to "save a buck" on mail-order medicines... even the so-called "approved" ones? Could be these products measure up to your expectations of what's good for your patients. Then again, they may not be quite the "sure cure" they're "quacked" up to be.

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Mechanical action cleans all surfaces by releasing millions of effervescent bubbles to swirl away odor-causing debris.

Chemical action converts food and saliva proteins into dispersible forms, breaks down mucinous binding of plaque and helps loosen early calculus.

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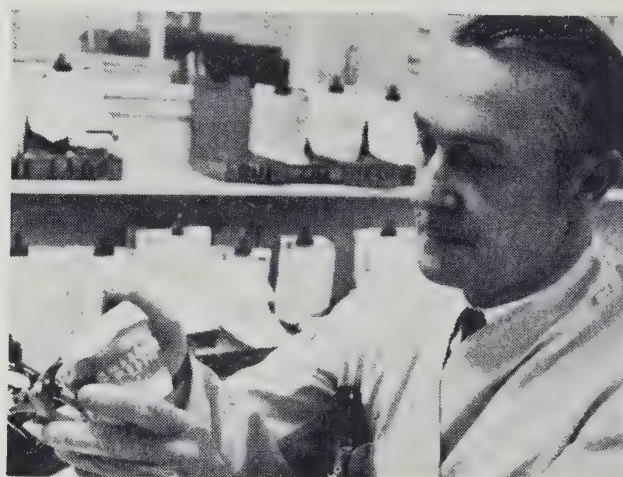
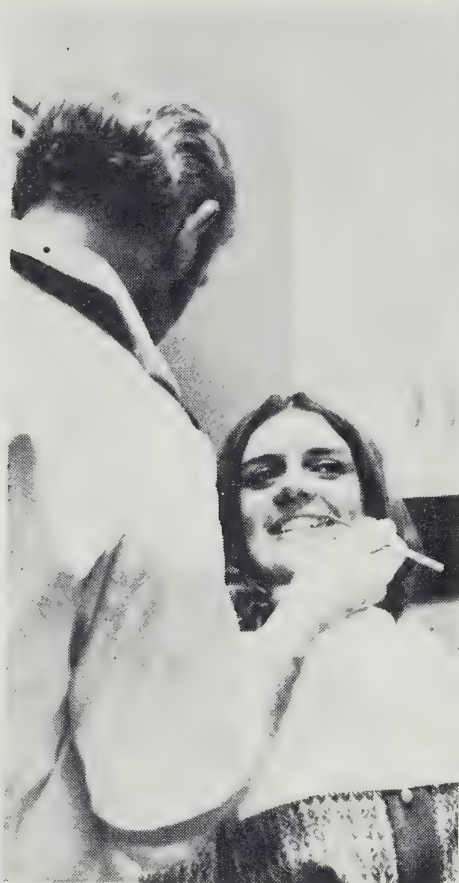
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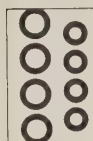


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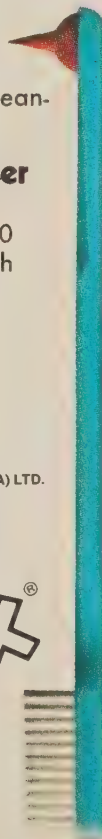
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*Goldman, H. M., and Cohen, D. W.: Periodontal Therapy, ed. 4, St. Louis, The C. V. Mosby Company, 1968, pp. 319-320.

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Please quote competition number: cc7035

Closing date for receipt of applications: as soon as possible.

For application forms please contact: Public Service Commission, Room 207 Legislative Bldg., Regina, Sask.

YOUR SECURITY

The last article suggested that building an estate with retirement in mind could be achieved by using the government's rules and deciding on a realistic goal to be systematically reached. Two more tips will be discussed.

3. Don't be greedy; aim for a reasonable return

We have all heard the old sayings:

Listen to a broker and you will go broke.

If all the investment advisers knew all the answers, they would all be millionaires.

Some recent, interesting quotes in the financial papers give us other things to consider:

Do not feel sorry for the unsophisticated investor who buys good stocks and lets them gather dust for he will end up wealthy, while the in and out trader will likely have any profits eaten up with commissions and taxes.

Losing money may be fast but making it takes time.

Since the 1960's the stock averages have done better than the average stock.

More than half of the mutual funds do not perform as well as the Toronto Stock Exchange averages.

The average mutual fund increases less than 7 per cent per annum compound interest over the long term.

Most dentists are approached by various salesmen with glowing reports of their fund's performance over a chosen short period. The salesmen, however, neglect to give comparisons over the past five years or more. Also, comparisons are made on net asset values and, although they may reflect the administration charge as a percentage of net assets, they do not include the 8 to 9 per cent sales load and the service charge (usually a small percentage

Deaths

Albert, Gerard A. 75. Montreal. University of Montreal, 1924. July 1973.

Broderick, James Vincent 73. Cornwall, Ont. Royal College of Dental Surgeons of Ontario, 1922. 13-6-73.

of net assets deducted annually) made by the trust company that secures the funds.

Some interesting problems may occur with managed money. Two well known mutual funds were leaders in their field for their first 10 years, but have had a mediocre to poor record in the past 10. Pitfalls may occur in managing funds when management changes or is pressured into putting money into so-called "go-go" stocks, which drop drastically with bad news and sometimes never return. There have been cases where smaller funds, not getting enough sales, have switched to another fund. In one case, half of the assets were used as collateral for a bank loan. It is possible for smaller funds to have one major shareholder with a considerable portion of the funds, which if redeemed, would dramatically affect the fund's performance.

The CDA registered retirement savings plan is relatively safe from these pitfalls, because of the Royal Trust's long record of safety and conservative performance, using well trained managers and proven methods of investing. Since all securities are bought with dentists' money, there is little danger any individual or group could harm the fund by redemption. The common stock fund's record of performance over the past five years is better than that shown by the larger mutual funds. Its record since inception is well over average. Considering that the unit value represents the money that a dentist puts in and takes out, without any extra charges, this record should speak for itself.

A realistic return could be considered at 7 per cent compounded annually. Reaching for 7 per cent will approximately double an individual's money in 10 years, improve 40 per cent in five years, and by investing the same amount annually for 10 years, will improve another 40 per cent. Using this simple method of calculation, we can now show an easy way of building a retirement fund without depending on dreams of higher returns, which are unlikely to be realized.

4. The earlier you start building the better

Using the above approximate formula (exact figures are not practical because projected figures

are merely academic), it can be seen how easily money may grow over the long term. The following table shows the growth expectancy in 40 years of savings of \$1000 a year.

	4th	3rd	2nd	1st
\$1000 a year at end of:	10 years	10 years	10 years	10 years
1st 10 years (40%)	14,000	14,000	14,000	14,000
2nd 10 years (doubled)	28,000	28,000	28,000	
3rd 10 years (doubled)	56,000	56,000		
4th 10 years (doubled)	112,000			
Total for number of years invested:	\$210,000 40 years	\$98,000 30 years	\$42,000 20 years	\$14,000 10 years

Thus, with 40 years of saving (age 25-65) an individual could have \$210,000, which would buy an annuity of \$21,000 a year at age 65. This entails a \$1,000 a year saving, which, with the tax advantage, could cost an average of \$600 from a yearly income.

The average dentist, however, may save for only a 30 year period, from age 30 to 60, for example. He could possibly save \$2,000 a year, resulting in \$196,000. Extending this for another five years at 7 per cent would give him \$274,000. Starting at age 40 by investing \$4,000 a year to age 60, would give an individual \$168,000. Keeping this to age 65 would result in \$235,200.

Thus, according to the formula, early investment is best. In the next article, the fifth tip, "Make use of hindsight to plan your future" will be discussed.

These articles are supplied to the Journal by Dr. O.F. Wright of Vancouver. Dr. Wright is publicity chairman for the Canadian Dental Association's Council on Insurance and Investment.

Carefoot, John Miller. 48. Edmonton. University of Toronto, 1950. 28-6-73.

Dinniwell, Richard Ernest. 78. Bowmanville, Ont. Royal College of Dental Surgeons of Ontario, 1921. 30-7-73. Survived by Eva (wife); Mrs. Jean Sturdy, Mrs. Patsy Palmer and Mrs. Lois Spencer (daughters).

Hertz, Alexander John. 52. Olds, Alberta. University of Alberta, 1951. 17-6-73. Survived by Jean (wife); Patrick, Gregory and Kevin (sons); and Kathleen and Barbara (daughters).

Long, Harold James. 78. Peterborough, Ont. Royal College of Dental Surgeons of Ontario, 1922. 28-7-73. Survived by Alberta (wife), and Mrs. Jane Anne Waite (daughter).

MacDonell, Malcolm James. 75. Saskatoon. Royal College of Dental Surgeons of Ontario. 1924. 21-7-73. Survived by Doris (wife); Mrs. Mary Fowke, Mrs. Margaret Forgay, Mrs. Barbara Lane and Mrs. Charlotte Etches (daughters).



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Le Congrès national

Vancouver se prépare à accueillir le Congrès 1973 de l'ADC

Les préparatifs en cours laissent prévoir que le Congrès national sera le plus réussi que le pays ait connu. Les inscriptions anticipées affluent déjà aux quartiers généraux, et tout laisse prévoir que Vancouver sera témoin de la présence d'un nombre de dentistes dépassant toutes les prévisions. Des centaines de délégués des provinces maritimes et des provinces centrales, fascinés par l'hospitalité traditionnelle des provinces de l'Ouest et par l'intérêt professionnel que présente un programme de premier ordre, se préparent à envahir Vancouver.

Le programme du Congrès national de l'ADC débutera officiellement par la cérémonie d'ouverture, le 14 octobre à 19 heures 30. Au cours de ce gala inaugural, l'ADC décernera des prix aux étudiants lauréats du concours de clinique de table, et la Fondation canadienne de recherches dentaires honorerait aussi le lauréat de son prix scientifique. De plus, plusieurs organismes, dont les activités sont reliées étroitement à la dentisterie canadienne, ont tenu à présenter officiellement leurs hommages aux délégués présents.

Le programme d'ouverture sera suivi du célèbre Oktoberfest de Vancouver, dont le programme mouvementé se déroulera aux accents de la musique bavaroise et la disponibilité accueillante de barils bien galbés de bière blonde. Inutile d'ajouter que la fête passera à l'histoire!

Parmi les événements présentant un intérêt particulier aux délégués, signa-

lons l'attribution de la plus haute distinction décernée par l'Association au docteur Harry Worth, de Vancouver, qui sera nommé membre d'honneur de l'Association dentaire canadienne, en reconnaissance de sa contribution extraordinaire à la dentisterie canadienne. Le docteur Worth apparaît aussi au programme scientifique du Congrès 1973, en qualité de clinicien.

La réception du président

La réception du président du Congrès 1973 prendra figure de gala en honneur du docteur David K. Peters de Saint-Jean, Terre-Neuve. La réception aura lieu dans la soirée du mardi, 16 octobre, dans la salle de bal British Columbia de l'hôtel Vancouver. Un banquet gastronomique, susceptible de réjouir les palais les plus exigeants, sera suivi d'un bal. A cette occasion, l'habit sera de rigueur. Les billets seront bientôt en vente à l'intention des délégués qui s'inscrivent avant l'ouverture du Congrès.

Diner en honneur de l'installation du président

La formalité d'entrée en exercice du nouveau président, 1973-74, de l'Association dentaire canadienne, le docteur John Abra de Winnipeg, aura lieu au cours du diner, le mercredi 17 octobre, dans la salle de bal British Columbia de l'hôtel Vancouver. Les délégués inscrits et leurs épouses sont invités à l'hôtel Vancouver. Les délégués inscrits et leurs épouses sont invités à cet événement. Des billets, à titre gracieux, seront disponibles à tous les délégués inscrits avant l'ouverture du Congrès.

Le Canada

Le Québec projette de rendre le français obligatoire pour toutes les professions

Tous ceux qui s'engageront dans une profession au Québec, après le 1er juillet 1976, devront posséder une connaissance du français leur permettant d'exercer leur profession dans cette langue, d'après la disposition de l'amendement d'une loi proposée récemment par le gouvernement libéral de la province.

Les nouvelles exigences linguistiques de cette loi, dont l'adoption ne saurait faire de doute puisqu'elle reçoit l'appui de tous les partis politiques de la province, affectera 37 professions comprenant les dentistes, les médecins, les avocats, les architectes, les ingénieurs, les infirmières et les travailleurs sociaux.

Avant la date limite du 1er juillet, les personnes engagées dans une profession seront autorisées à poursuivre leur travail même si elles ignorent le français.

Les dispositions de la loi proposée par le ministre des Affaires sociales, M. Claude Castonguay, autoriseraient un certain nombre de personnes anglaises unilingues à exercer leur profession pour une période limitée et sous certaines restrictions.

Les corporations professionnelles qui régissent l'accès aux professions au Québec seraient autorisées à émettre des permis temporaires pour une période maximale d'un an. Ce permis ne pourrait être renouvelé que sur l'approbation du Cabinet et uniquement dans les cas où "l'intérêt public l'exige".

La loi spécifie qu'un "permis limité" pourrait être accordé à "tout citoyen canadien membre d'une corporation similaire dans une autre province".

Les personnes munies d'un "permis limité" n'auraient pas l'autorisation d'avoir des contacts avec le public, dans l'exercice de leurs fonctions, et ils devraient se limiter à ne travailler que pour un seul employeur.

Démission du docteur Hubert La Belle

Le ministre des Affaires sociales, monsieur Claude Castonguay a annoncé la nomination, par le lieutenant-gouverneur en conseil, de monsieur Yves Comtois comme membre de la Régie de l'assurance-maladie, à titre de l'un des deux représentants des professions de la santé autres que la profession médicale.

Monsieur Comtois remplace à ce poste le Dr Hubert La Belle, président de l'Association des chirurgiens-dentistes, qui a donné sa démission. Monsieur Comtois est président de l'Association québécoise des pharmaciens propriétaires depuis 1971. Il a été également président de l'Association des pharmaciens du Québec en 1969; vice-président de l'Association québécoise des pharmaciens propriétaires en 1970; président de l'Agence du service social de Sherbrooke 1970-1971 et enfin il est pharmacien propriétaire à Sherbrooke.

La Loi de la Régie de l'assurance-maladie prévoit que la Régie est formée de quatorze membres tous nommés par le lieutenant-gouverneur en conseil et que deux de ces membres sont nommés après consultation des organismes des professions de la santé autres que la profession médicale.

L'Association dentaire de l'Ontario considère le recrutement futur des membres volontaires.

D'ici une année ou deux l'Association dentaire de l'Ontario franchira une nouvelle étape de son histoire alors qu'elle deviendra un organisme bénévole. A compter de ce jour, les dentistes autorisés de la province ne se-

ront plus requis d'être automatiquement membres de l'Association.

Ce changement dans la politique de l'Association a été entraîné par la nouvelle loi sur les disciplines de la santé du gouvernement. Cette nouvelle loi, qui crée un code des professions pour les cinq principales disciplines de la santé, sera présentée en chambre durant la session du printemps. Toutefois, la loi ne sera probablement pas promulguée avant la fin de l'année.

L'une des principales conséquences de la nouvelle loi pour la dentisterie consistera à déterminer de façon très nette les champs d'action du Collège royal des chirurgiens dentistes de l'Ontario et de l'ADO. Le CRCDD régira la politique alors que l'ADO verra à l'aspect administratif de la profession. Le CRCDD représentera le gouvernement et le public, tandis que l'ADO surveillera les intérêts de la profession.

Selon le programme du gouvernement, l'Association pourra devenir bénévole dès 1974. Il se peut aussi que la transition réelle soit retardée jusqu'en 1975.

Les membres du Comité exécutif de l'Association sont présentement à étudier les modalités éventuelles de la conversion. Le Bureau des gouverneurs de l'ADO a donné son approbation au principe de l'adhésion conjointe aux trois niveaux de l'organisme professionnel, local, provincial et national. D'après ce principe, une seule cotisation permettra aux dentistes de la province de bénéficier des privilèges de l'adhésion à leurs sociétés locales, à l'ADO et à l'ADC.

L'AMC fonde un nouveau journal à l'intention de l'équipe canadienne de santé

Le 1er septembre 1973 paraîtra le premier numéro de "Médiscopie". Ce nouveau journal, publié par l'Association médicale canadienne, remplira le rôle tant attendu d'organe de communication à l'intention de tous les membres des effectifs de la santé au Canada.

La fondation de cette nouvelle publication des plus intéressantes fut révélée le 30 mai dernier, au cours d'une réunion convoquée par l'AMC. A cette occasion, cette dernière invita des représentants du domaine de la médecine, des sciences infirmières, de

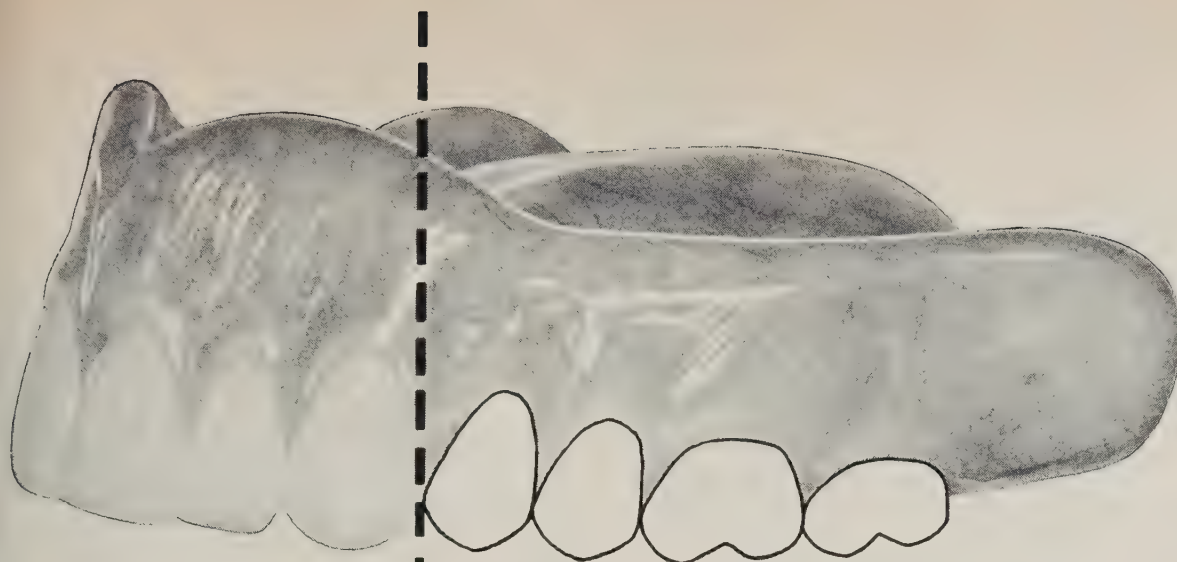
la pharmacologie, de la dentisterie et de l'administration hospitalière. Le docteur W.G. McIntosh, directeur de l'ADC et le docteur Marcel Hébert, rédacteur en chef du Journal dentaire du Québec, y représentaient la profession dentaire. Le docteur G. Gingras, président de l'Association médicale canadienne a déclaré: "Afin de répondre aux désirs d'un public croissant, afin de suffire, en qualité et en quantité, au rendement que nous sommes en mesure de fournir à la cause des soins de santé, tout en tenant compte des prévisions budgétaires, le vocable "équipe canadienne de la santé" doit dépasser l'acception vague d'une conception philosophique. Il est maintenant inadmissible que l'action des travailleurs de la santé poursuive des objectifs et des activités isolées qui rivalisent avec les initiatives de leurs collègues. Le premier but de Médiscopie sera d'assumer le rôle d'organe de communication entre tous les membres de l'équipe de la santé et des disciplines qui s'y rattachent, afin de promouvoir l'évolution dynamique de l'équipe canadienne de la santé.

A ses débuts, le journal bilingue, qui compte 16 pages, sera publié mensuellement, et à compter du 1er janvier 1974, il deviendra bi-mensuel. Ses pages seront consacrées à la distribution des soins de santé, à l'aspect économique des services de santé, aux nouvelles, aux affaires politico-médicales et à l'activité des professionnels de la santé. Toutes les opinions et toutes les prises de position présentant un intérêt pour les membres de l'équipe de la santé feront l'objet d'une attention particulière.

Milan Korcok, l'un des rédacteurs les plus réputés au Canada, dans le domaine des sciences médicales, occupera les fonctions de rédacteur en chef de Médiscopie.

L'Université Western confère un doctorat d'honneur au docteur Don Gullett

Le docteur Don W. Gullett, de Toronto, recevra un doctorat d'honneur en droit de l'Université Western, le 8 juin 1973. Il fait partie d'un groupe de neuf canadiens éminents représentant diverses disciplines et professions honorées par



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l'université au cours de la 214e collation tenue à London, du 5 au 8 juin prochain.

Le titre conféré au docteur Gullett a pour but de reconnaître le rôle majeur qu'il a joué dans la croissance et le développement interne de la profession dentaire canadienne.

Le docteur Gullett obtint son diplôme de la Faculté de dentisterie de l'Université de Toronto en 1923 et exerça sa profession, en pratique privée, jusqu'en 1940. Il passa ensuite à l'administration dentaire à temps complet et joua un rôle primordial dans l'organisation des mécanismes internes de la profession, tout en contribuant à promouvoir des normes élevées de pratique dentaire.

Il fut secrétaire de l'Association dentaire canadienne de 1942 à 1964 et occupa des fonctions administratives dans les principaux domaines de la dentisterie, y compris un mandat de 17 ans en qualité de secrétaire-archiviste du Collège royal des chirurgiens dentistes de l'Ontario et un autre mandat de 10 années, de 1957 à 1967, en qualité de consultant spécialisé en dentisterie pour le compte de l'Organisation mondiale de la santé.

Le mérite du docteur Gullett a été reconnu sur le plan international par la remise de plusieurs prix dont la Médaille du couronnement en 1953, le Prix William J. Gies, de l'American College of Dentists, en 1963, le Distinguished Service Award de l'American Association of Dental Editors, en 1964, la Médaille du Centenaire en 1967 et le Prix Elmer S. Best, de l'Académie Pierre Bouchard en 1970.

Le docteur Gullett est l'auteur de plus de 50 communications publiées dans les revues dentaires. Il est aussi l'auteur du volume *A History of Dentistry in Canada*, publié à sa retraite.

Nouvelles internationales

Le docteur Hendershot résigne ses fonctions de rédacteur en chef du Journal de l'ADA

Le docteur Leland C. Hendershot a remis sa démission en qualité de

rédacteur en chef du *Journal de l'Association dentaire américaine*. Le Conseil d'administration de l'ADA a accepté sa démission au cours de la réunion de mars, tenue au secrétariat général à Chicago.

Le docteur Hendershot, dont la santé est demeurée précaire à la suite d'une crise cardiaque en 1968, entra au service de l'Association en 1959 où il occupa tout d'abord la fonction de secrétaire-adjoint du Conseil de thérapie dentaire. En 1962, il fut nommé rédacteur-adjoint de l'Association et rédacteur en chef en 1963. Au cours de son mandat, le format du Journal fut modifié considérablement et son contenu augmenté. Il s'attacha durant deux ans à doter la profession d'un journal bi-mensuel et c'est ainsi que *l'ADA News* vit le jour en 1970. Il dirigeait aussi trois autres journaux publiés par l'ADA.

En janvier 1973, le docteur Hendershot fut maintenu dans ses fonctions de président du Comité des publications de la Fédération dentaire internationale.

Organisations dentaires

Création de l'Académie canadienne de radiologie buccale

L'Académie canadienne de radiologie buccale a été fondée à Toronto en janvier 1973.

L'Académie s'est donné comme objectif de contribuer à l'avancement de l'art et de la science de la radiologie buccale au Canada afin de maintenir et d'améliorer la santé des Canadiens.

Les membres fondateurs composant le Comité exécutif sont: le docteur H.G. Poyton, de Toronto, président; le docteur J.A. Reid, de London, président désigné; le docteur A. Ruprecht, de London, secrétaire; et le docteur D.W. Stoneman, de Toronto, trésorier.

Toutes les personnes désireuses de devenir membres de la nouvelle Académie devront s'adresser au docteur A. Ruprecht, Faculté de dentisterie, Division de la radiologie buccale, Université de Western Ontario, London.

L'économie

Le rapport annuel du ministère des Affaires sociales déposé à l'Assemblée nationale

Le ministre des Affaires sociales, monsieur Claude Castonguay, a déposé le 4 juillet 1973 devant l'assemblée nationale le rapport annuel de son ministère pour l'exercice 1972/1973. Le rapport décrit les objectifs et les programmes du ministère et présente, en annexe, les principales statistiques du domaine des affaires sociales regroupées par région socio-sanitaire.

Ce dossier, publié pour la première fois, offre des données statistiques sur les domaines de juridiction propres au ministère des Affaires sociales: la santé, les services sociaux et la sécurité du revenu, abordés du point de vue de l'équipement, du personnel, des clientèle, des coûts. Le dossier présente également certaines statistiques sur la population et l'état civil de même que sur le secteur de l'éducation qui est souvent relié à la condition sociale des individus.

Le dossier régional permettra aux travailleurs des domaines de la santé et des services sociaux de mener des études sur les besoins et les caractères sociographiques des populations desservies, sur le chiffre, la distribution et l'utilisation des ressources humaines et matérielles disponibles dans chaque région socio-sanitaire.

A ce titre, le dossier constitue un premier instrument de référence et de documentation très utile à des fins d'information et de participation. Ce sera, tout particulièrement, un document de travail indispensable pour les Conseils régionaux de la santé et des services sociaux (CRSSS), organismes consultatifs chargés de faire le lien entre le ministère des Affaires sociales et les établissements socio-sanitaires des différentes régions et de stimuler la participation du milieu à l'identification de ses besoins. Le dossier régional a été préparé par la Direction générale de la planification du ministère des Affaires sociales dans le cadre du projet "Dossier régional et indicateurs sociaux" (DORIS).

Les deux volumes du rapport annuel du ministère des Affaires sociales sont

en vente aux comptoirs de l'Editeur officiel du Québec: le rapport annuel, au prix de \$1.00; l'annexe "Dossier régional", au prix de \$2.00.

La fluoration

Peterborough aura la fluoration en juillet

A la suite d'un vote favorable à la fluoration à Peterborough, Ontario, l'équipement est actuellement en voie d'installation et devrait fonctionner en juillet. Le système fournira un approvisionnement d'eau fluoré à 56,000 personnes, a déclaré un porte-parole de la Commission des services publics. En incluant la ville de Peterborough, 19 des 26 villes de l'Ontario ayant une population de 50,000 et plus auront des systèmes de fluoration en opération.

Progrès de la fluoration

La Georgie et le Nebraska devinrent récemment les huitième et neuvième états à réclamer la fluoration pour la plupart des villes de ces états. Boston, l'une des rares villes importantes des Etats-Unis, a révélé qu'elle se dispose à installer la fluoration vers 1976.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 juillet 1973:

Fonds avec garantie \$10.301;

Fonds à revenu fixe \$13.891;

Fonds d'actions ordinaires \$30.544.

L'avoir total (valeur marchande) du régime se montait à \$16,216,313.40.

Au cours du mois précédent, les transactions ont été les suivantes: achat 11,294 CIF Conventional Mortgage Fund units; 1,600 actions de Canada Permanent Mortgage Corporation; et 1,300,000 Aluminum Company of Canada note. Vente 1,300,000 Aluminum Company of Canada note.

VOTRE SÉCURITÉ

L'article précédent suggérait des moyens de se constituer un fonds de retraite et vous conseillait d'appliquer la réglementation gouvernementale, de vous fixer un objectif réalisable, que vous pourriez atteindre en adoptant les procédés systématiques pour ce faire. Cet article vous propose deux autres conseils utiles:

3. Ne soyez pas trop ambitieux; proposez-vous un revenu raisonnable.

Nous connaissons tous les adages traditionnels:

Prêter l'oreille à un courtier, c'est choisir de se ruiner.

Si les conseillers en placements détenaient les solutions, ils seraient tous millionnaires.

Toutefois, nous aurions avantage à prendre connaissance de quelques extraits intéressants tirés des journaux financiers. Ils nous feront réfléchir.

Il ne faut pas s'apitoyer sur l'investisseur sans complications qui achète des valeurs solides pour les vouer ensuite à l'oubli, car il finira par devenir riche. Alors que le négociant raffiné, qui trafique continuellement ses valeurs, verra ses bénéfices éventuels dévorés par les commissions et les impôts.

L'argent se perd rapidement, mais s'accumule lentement.

Depuis 1960, les bénéfices moyens sur les valeurs ont dépassé la moyenne des valeurs.

Plus de la moitié des fonds mutuels ont un rendement inférieur à celui de la moyenne des valeurs de la bourse de Toronto.

Le fonds mutuel moyen bénéficie d'un accroissement à long terme de moins de 7% par année, à intérêt composé.

La plupart des dentistes sont sollicités par divers représentants en valeurs qui font grand état de rapports fulgurants démontrant les bénéfices à court terme de leur régime de placements, aux fins de constituer un fonds de retraite. Toutefois, ces mêmes sollicitateurs négligent de comparer ces bénéfices répartis sur une période de 5 années ou plus. Ils se contentent, de plus, de ne comparer que les valeurs nettes des bénéfices, même s'ils tiennent compte aussi des frais d'administration représentés par un pourcentage des valeurs nettes, mais ils semblent oublier les frais de 8 à 9% que réclame la taxe de vente et les frais des services (généralement un faible pourcentage des valeurs nettes, perçu annuel-

lement) exigés par la société d'investissements qui garantit les fonds. L'argent bien administré peut offrir des résultats fort intéressants. A titre d'exemple, deux sociétés d'investissements ont occupé le premier rang dans leur domaine au cours des dix premières années de leur existence. Mais le rapport de leurs activités des dix dernières années s'est montré plutôt médiocre, voire même pauvre. Le placement de fonds peut être victime de traquenards entraînés par un changement d'administration ou les erreurs de la direction poussée à investir dans de pseudo bons placements, qui s'effondrent piteusement sous l'effet de mauvaises nouvelles, pour ne jamais parvenir à refaire surface. On relève même des cas où des fonds peu considérables, dont les ventes ne parvenaient pas à assurer la rentabilité, qui furent investis dans un autre fonds. On signale même un cas où la moitié des valeurs fut déposée en nantissement pour un prêt bancaire. Il arrive aussi, dans les cas de fonds de moindre importance, qu'un gros actionnaire détenant une partie considérable du fonds, menace la stabilité de l'entreprise. En effet, dans l'éventualité où cet actionnaire décidait de retirer sa part, ce serait le désastre.

Votre plan d'épargne retraite offert par l'ADC est à l'abri de ces contingences. En effet, il porte la garantie de la réputation du Trust Royal, une réputation établie après de longues années d'administration couronnée de succès, qui se caractérisent par l'application de méthodes sécuritaires et conservatrices confiés à des responsables bien formés qui connaissent les techniques éprouvées de placement. De plus, comme toutes les valeurs sont constituées avec l'argent des dentistes, il n'y a que peu de risques de voir un individu ou un groupe bouleverser l'équilibre du fonds en réclamant un remboursement. Ajoutons que les résultats obtenus par l'administration des actions ordinaires depuis cinq ans dépasse ceux des fonds mutuels plus considérables et qu'ils se montrent très supérieurs à la moyenne depuis le début. Quand vous considérez que votre quote-part de valeurs représente l'argent que vous avez investi ou retiré, sans frais additionnels, il faut dire que ces résultats constituent un témoignage éloquent. Le rendement réel peut être évalué à 7% composé, annuellement. Si vous fixez votre objectif à 7%, vous doublerez approximativement votre argent en 10 ans. Augmentez le montant du placement de 40% en 5 ans et l'investissement du même montant annuel pendant 10 ans augmentera le rendement de 40%. En appliquant cette méthode simple de calcul, il nous est possible

de démontrer un moyen facile de se constituer un fonds de retraite sans se leurrer dans des rêves de revenus plus élevés, virtuellement impossibles à réaliser.

4. Plus vous commencez tôt, plus grandes seront vos chances de succès.

En appliquant la formule ci-dessous (il n'est pas pratique d'utiliser des montants exacts, parce que les projections sont purement conventionnelles), il nous est possible de démontrer l'accroissement des sommes investies à longue échéance. En supposant un placement de \$1000 par année, le barème suivant révèle l'accroissement possible en 40 ans.

\$1000 par année à la fin de la	4e période de 10 ans	3e période de 10 ans	2e période de 10 ans	1ère période de 10 ans
1ère période de 10 ans (40%)	14,000	14,000	14,000	14,000
2e période de 10 ans (double)	28,000	28,000	28,000	
3e période de 10 ans (double)	56,000	56,000		
4e période de 10 ans (double)	112,000			
	\$210,000	\$98,000	\$42,000	\$14,000
Total après	40 ans	30 ans	20 ans	10 ans

Ainsi, 40 années d'économie (de 25 à 65 ans) permettent d'accumuler \$210,000, une somme suffisante pour assurer une rente annuelle de \$21,000 à l'âge de 65 ans, en tablant sur \$1,000 d'économie par année qui n'entraînent qu'un impôt annuel de \$600 à percevoir sur la part de revenu consacrée au budget domestique.

En réalité, le dentiste moyen ne peut économiser que durant 30 années, c'est-à-dire de 30 à 60 ans. Il pourrait alors investir \$2,000 par année et accumuler \$196,000. En admettant que ce dernier laisse profiter son capital encore 5 années, il aurait alors accumulé \$274,000.

Quand une personne commence plus tard, à l'âge de 40 ans par exemple, en plaçant \$4,000 par année jusqu'à l'âge de 60 ans, elle pourrait alors disposer de \$168,999, et en laissant profiter son capital encore 5 années, il atteindrait la somme de \$235,000.

Comme le démontre le tableau ci-dessus, il est indéniable que plus on commence tôt, meilleurs sont les résultats. Le prochain article traitera du cinquième conseil: Pour assurer efficacement votre avenir, réglez votre visée pour le tir à longue portée.

Ces articles sont fournies au Journal par le docteur O.F. Wright de Vancouver. Le docteur Wright est président de la publicité, Conseil de l'assurance et de placements de l'Association dentaire canadienne.

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Maxillo-mandibular surgery for correction of dentofacial deformities:

6. Apertognathia (open bite)

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This is the sixth and final instalment in a series of articles on current practice of maxillo-mandibular surgery. The articles are provided by courtesy of the Royal College of Dentists of Canada.

Open bite is characterized by a lack of contact between teeth of opposing dental arches.¹ The surgical correction of open bite is one of the most challenging aspects of oral surgery because of the tendency to relapse. A correct diagnosis is therefore mandatory so that the proper surgical technique may be employed.

The majority of factors that predispose to open bite are acquired.² Extrinsic factors that prevent or disrupt the normal eruption of teeth, such as sucking of thumbs, fingers, pacifiers or toys, will produce this deformity. Likewise, improper reduction of mandibular or maxillary fractures often results in open bite.

Intrinsic factors, such as improper action of the tongue, lips and cheeks during mastication, swallowing and speaking, may contribute to open bite.¹ Tongue thrust is usually associated with a retained infantile swallow, thumb sucking, chronically inflamed tonsils, premature loss of deciduous teeth or psychological motivations.^{3,4}

Thoma² categorizes apertognathia into slanting, angulated and lateral open bite. After careful evaluation of the clinical assessment, cephalometric analysis and study casts, apertognathia is more easily divided into non-skeletal (dento-alveolar) and skeletal open bite.

In a non-skeletal open bite the deformity usually lies within the incisors and cuspids. It is often associated with extrinsic factors.⁵ The craniofacial pattern is normal. Clinically, the thirds of the face are harmonious. The deformities should not be corrected surgically until a speech therapist has controlled tongue thrusting habits.⁶

Non-skeletal open bite can be successfully corrected by orthodontic treatment during the period of growth if the extrinsic factors are eliminated. In adults the problem may be corrected by an anterior alveolar osteotomy in the maxilla or

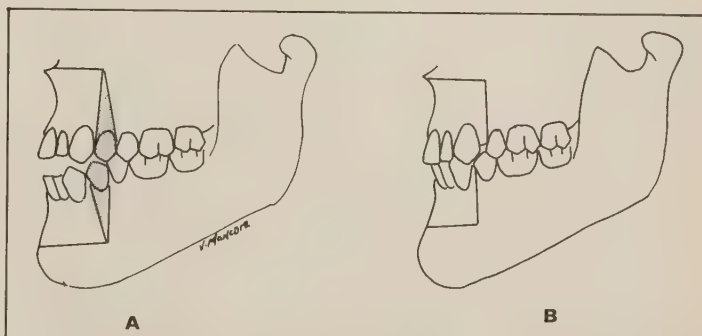


Fig 1 A, non-skeletal open bite. B, the defect can be corrected by anterior alveolar osteotomies in either the maxilla, the mandible or both jaws.

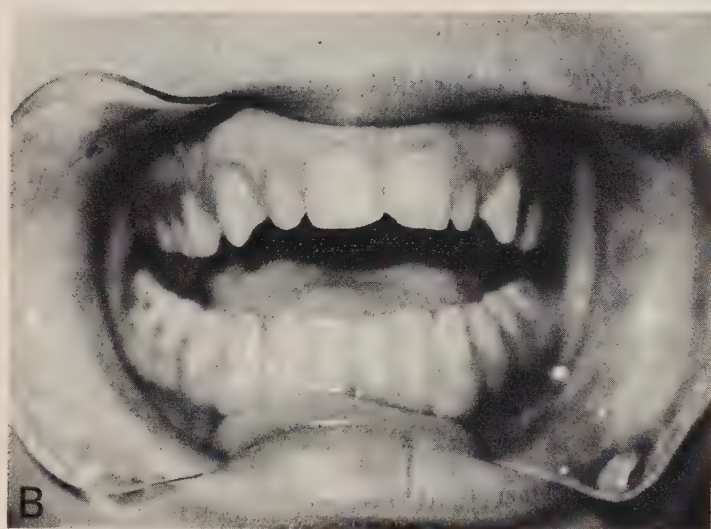
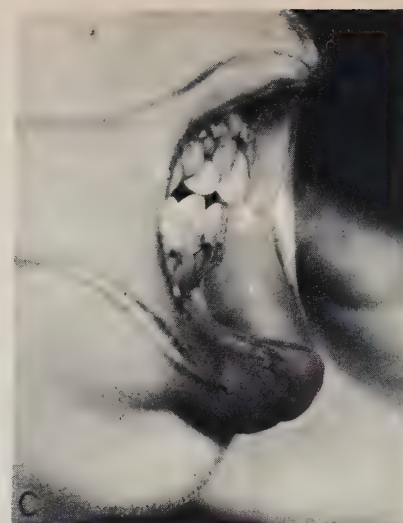


Fig 2 True skeletal open bite. A, profile. B, only the posterior molars occlude. C, D, postoperative profile and occlusion three months after vertical osteotomy with coronoidotomy were performed. Fixation appliances and wires have just been removed. The gingiva regains its normal contour in seven to 14 days.

mandible^{7,8} (Fig 1). If the lip-maxillary gingival margin relationship is unfavourable, posterior maxillary osteotomies should be performed along with the anterior alveolar osteotomy.⁸

In a true skeletal open bite only the last molars occlude. Lower third face height is increased (Fig 2). There is usually a retained infantile swallowing pattern. During normal swallowing, perioral musculature activity is minimal but in the retained infantile swallow there is increased contracture of the perioral muscles in order to establish good lip seal. The tongue is also thrust forward.³ Cephalometric analysis reveals a steep mandibular plane angle, a short mandibular ramus, a wide gonial angle and procumbent incisors.⁹

The surgical correction of skeletal open bite can be accomplished primarily in the mandible. Posterior alveolar osteotomies of the maxilla (Fig 3A) have been used, but the indications for this operation must be very specific.¹⁰⁻¹² The mandibular

procedures initially involved the body. The Y and V shaped osteotomies designed by Thoma have been surpassed by ramus procedures.²

Caldwell and Letterman's¹³ vertical osteotomy with a coronoidotomy (Fig 3D), inverted L osteotomy with a bone graft¹² and sagittal osteotomy^{14,15} (Fig 3C) are the available techniques for surgical management of skeletal open bite. Shira⁵ reported good results with the vertical osteotomy with little tendency for relapse. Hinds and Kent¹ advocate the inverted L and Steinhauser¹⁶ leans towards the sagittal osteotomy. Immobilization should last for 10-12 weeks. Elastic traction may be necessary for a period of three to six months postoperatively in order to reduce the possibility to relapse. Very rarely partial tongue excision may be required.¹⁷ Usually, the tongue will atrophy and adapt to the confines of the new, corrected mandibular position.

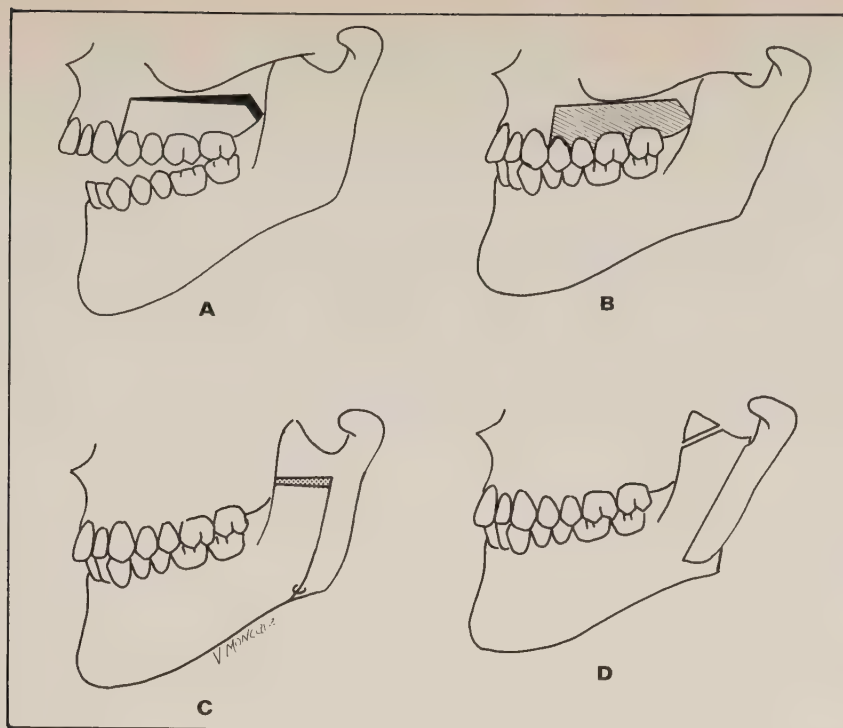


Fig 3 Surgical correction of true skeletal open bite. A, posterior maxillary osteotomy outlined. B, posterior maxillary segment is raised. C, inverted L sliding mandibular osteotomy with bone graft. D, vertical mandibular osteotomy with coronoidectomy.

Conclusion

Thanks to the great variety of operative procedures available for maxillo-mandibular surgery, there is no longer any reason why patients should have to tolerate the psychologic trauma, speech impediments or premature tooth loss that may accompany apertognathia and Class II and Class III and other malocclusions. The various procedures that have been described in this series of articles offer the oral surgeon unlimited scope for the correction of severe, disfiguring and handicapping dentofacial deformities.

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The authors wish to thank Mr. Douglas Slanker, photographer, and the Photography Department of the Doctors Hospital, for all photography work in this series of articles; and Dr. Van de Mark for permission to use photographs of one of his cases (Mandibular Prognathism).

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Factors in the identification of human skeletal remains

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This article acquaints the general practitioner with the methods by which one can determine the approximate age, sex, race, height, country of origin, occupation, habits, socio-economic background and education of skeletal remains.

Cet article a pour objectif de donner à l'omnipraticien un aperçu de la méthode adoptée pour déterminer l'âge, le sexe, la race, la taille, le pays d'origine, l'occupation, les habitudes de vie, le statut économique-social et le degré d'instruction, à partir de l'observation d'ossements humains.

In determining whether bones and teeth are from human or animal sources, recourse is made to anthropologic findings, comparative osteology, histology, serology and knowledge of dental characteristics. Once it has been established that the remains are of human origin, additional features can be taken into account when determining the age, sex, race and other characteristics of an unknown individual. Though the necessity for distinguishing animal from human remains may appear self-evident, this is often a source of considerable confusion. For example, it is not uncommon for the casual observer to mistake skinned bear paws for human hands during the hunting season.¹

Positive identification is essential for a variety of reasons: determining the deceased's marital status, resolving insurance claims, probate of a deceased's estate, property settlements, pension settlements, liquidation of business contracts, inheritance, issuing of death certificate, determining succession and tax settlements.

It is also necessary to determine whether a skeleton is of recent demise. It is of little practical importance to establish the identity of a 200 year old skeleton unless some historical connotation or other legal implications are involved. Many tests, ranging from determinations of soil and environmental conditions to carbon dating of the skeleton, have been devised to estimate the time of death of an individual.

Tables 1 and 2 show what to look for and when and what chemical analyses can aid in establishing the identity of skeletal remains. The information thus derived can then be compared to data from

Age	Age changes	Sex changes
In utero to 2 years	Prenatal bone formation Centres of ossification Growth of cranium Growth of cranial base Birth moulding Calcification, eruption, root formation of primary teeth	Calcification and eruption of primary teeth
2-6 years	Ossification centres of tarsals, carpals and extremities of long bones Cranial length Calcification, crown completion, eruption of permanent teeth Loss of primary teeth	Crown formation, eruption of primary teeth Root formation and resorption of primary teeth Calcification, eruption, root formation of permanent teeth
6-12 years	Cranial length Ossification of long bones Root resorption of primary teeth Eruption, root formation of permanent teeth Cranial and mandibular growth Calcification of permanent teeth	Calcification, eruption, root formation of permanent teeth Root resorption, exfoliation of primary teeth
12-25 years	Calcification of permanent teeth Eruption, root formation of permanent teeth Fusion of extremities of long bones to shaft Angle of mandible Chin button Fusion of intra cranial sutures	Eruption, root formation permanent teeth Pelvic bones Bones of the skull Occipital process Chin button Mastoid processes Angle of mandible
35-38 years*	Cranial sutures Alveolar resorption Angle of mandible Ossification of external sutures of skull begins	Frontal bones (eyebrow) Femoral bones Spectropenetration ratio of human enamel Specific gravity of dentin Chemical analysis Styloid process
>40 years*	Ossification of parietal sutures Size of mental foramen Angle of mandible Size of pulp chambers Attrition, abrasion, wear facets Periodontal changes	
>50 years*	Angle of mandible Ossification of coronal sutures Size of mental foramen Alveolar resorption Size of pulp chamber	
>70 years*	Angle of mandible Ossification of temporal sutures Fusion and ossification of intervertebral disks Fusion of sternum Size of mental foramen Ossification of laryngeal and tracheal cartilages Senile involution of long bones	

*± 5 years

Other characteristics related to dental and skeletal findings

Race	Height	Country of origin	Habits
Shape of dental arches	Degree of calcification of long bones, usually complete by 22-25 years	Dental anomalies	Dental findings
Shape of orbits	Anthropologic height of long bones correlates to total height of body	Dental materials used	Length of long bones vs. other long bones
Relationship between mastoid processes, occipital protuberance and eyebrow ridge		Cavity preparation	Vertebral characteristics
Dental fluorosis		Incidence of caries	Erosion, abrasion
Degree of ossification of teeth		Dental fluorosis	Caries index
Colour of teeth		Abrasion	Periodontal disease
Type of place of restorative materials			
Ethnic characterization of skull			
Cephalic, upper facial and nasal indices			
Incidence of caries			
Incidence of extractions			
Incidence of periodontal disease			
Dental index			
Shape and size of teeth			
Abrasion			

missing persons' files. The identity of an unknown person can then be confirmed or excluded from positive identification.²

Calcification, crown completion, eruption and root formation of primary and permanent teeth can determine the age and sex in childhood and in the early adolescent period.³ The sex of an individual can also be determined by the specific gravity of dentine and the spectropenetration of human enamel.⁴ In adults the easiest way to determine sex is by the pelvic bones. Gustafson⁵ claims that age can be determined by the following six criteria: the amount of attrition, position of the gingival attachment, amount of secondary dentine deposition, amount of cementum apposition, the degree of transparency of roots and the amount of root resorption.

Centres of ossification of long bones, ossification of sutures and senile involution of bones can be of assistance in estimating the age of an older individual at the time of death. The length of the long bones correlates with the total height of the body.

Certain industries emit specific substances such as asbestos dust from the asbestos manufacturing

industries. Occupation and place of residence in or around an industrial area can therefore be determined from the composition of the calculus or the bones.

Abrasion of the anterior teeth can stem from certain habits (chewing pencils or hair pins, pipe smoking, toothbrushing, Eskimo and Indian leather workers who chew the leather in order to soften it) and occupations (wind instrument players, police officers using a whistle, electricians and upholsterers, carpenters who hold nails or wire between their teeth, dressmakers who hold needles between their teeth, and hairdressers who hold hair pins between their teeth).

Erosion can be expected on the teeth of individuals who consume acid beverages (excessive quantities of citrus juice or soft drinks) or work with caustic chemicals (manufacture of batteries, hat and fur manufacture, certain food industries, pharmaceuticals, paint manufacture and soft drink manufacture).

The effects of radioactive materials on bone turnover can be measured in persons working with such materials. Included are radiologists, dentists and others who work with radiographic equipment;

Table 2

Occupation	Socio-economic background	Extent of education
Chemical composition of bones and teeth	Dental findings	Correlates generally to socio-economic background
Calculus composition	Number of extractions	Social organization of the state
Dental findings	Degree of restorative dentistry	Other prepaid dental plans
Occupational habits	Type of restorative materials employed	Type and extent of restorative dentistry
Erosion, abrasion	Consideration of other findings	Extractions

also chemists and nuclear physicists working with radioactive material, and formerly watchmakers who made radium dials.

Other industries have potentially dangerous materials such as copper, bronze, mercury, phosphorus, lead, asbestos, iron and bismuth in their products or by-products.

The general correlation between socio-economic status and education is mirrored by dental care. This observation can, however, be altered by such factors as prepaid dental insurance or government-sponsored dental care programs. The type of dental restorative material used can also give important clues about the socio-economic status of an individual. Porcelain fused to gold restorations are rarely found in the poorer strata of society unless the recipient has attended the teaching clinic of a dental school in the area. People in certain European countries and the Caribbean region will tolerate the visual display of gold in the anterior part of the mouth while residents elsewhere will not.

Conclusion

This article has described some methods by which one can determine the approximate age, sex, race, height, country of origin, occupation, habits, socio-economic background and education of a skeletonized individual.

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An audiometric method for determining the length of root canals

Gingiva and periodontal ligament are continuous tissues capable of eliciting identical electrically-induced low-frequency oscillation sounds. This principle was utilized in an audiometric experiment for measuring root canal length. The method consists of (1) recording the sound produced at the gingiva of the tooth under treatment (the gingival sulcus/marker tone), and (2) marking the length of a special measurement reamer in the root canal and withdrawing it when the sound produced by the instrument coincides with the marker tone. The apparatus can be adjusted so that the appropriate measurement reamer sound is generated when the instrument tip is at the apical constriction or 0.5-1.0 mm short of the radiographic apex.

Les ligaments périodontaires sont des tissus continus susceptibles d'émettre des oscillations sonores produites par des impulsions électriques indentiques à base fréquence. Ce principe a été appliqué au cours d'une expérience audiométrique destinée à mesurer la longueur du canal radiculaire. La méthode consiste (1) à enregistrer le signal émis à la gencive de la dent sous traitement (signal indicateur du sillon gingival) et (2) à reporter la longueur sur un alésoir spécial dans le canal radiculaire, et à le retirer quand le signal produit par l'instrument coïncide avec celui du signal indicateur. L'appareil peut être ajusté afin que la mesure appropriée fournie par le signal de l'alésoir se manifeste quand la pointe de l'instrument atteint l'apex ou est à 0.5-1.0 mm de l'extrémité du canal.

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Effective endodontic treatment requires that the dentist have an accurate estimate of the length of each root canal involved. The accurate determination of this length is a key factor in successful root canal therapy.

Modalities employed for this purpose include tactile sensation, radiographic interpretation and, lately, a method applying the principle of electrical resistance. However, each of these methods has some drawback. Tactile sensation gives rise to excessive variance in measurement due to errors inherent in "feeling your way" down a canal. Radiography is time consuming in terms of processing the radiographs and the number of exposures required for accurate measurement of root canal length. Repeated exposure to radiation presents an additional hazard. The method employing the principle of electrical resistance also has its disadvantage because the operator must watch a meter constantly, thereby distracting his attention from the patient.

This paper illustrates how root canal length can be accurately determined through the perception of an auditory tone generated by means of low-frequency oscillation. To evaluate the practicality of this audiometric technique, experiments were conducted with a device employing the principle of electrical resistance and modified by the addition of an audible "marker tone."

Materials and methods

Apparatus — During preliminary experiments the resistance (R) was fixed, thus making it the audible marker of the “gingival crevice sound.” However, since the “gingival marker sound” varies slightly with different patients, the “marker” value for the “gingival crevice sound” was made variable so that dissimilar values for individual patients could be adjusted accordingly. This variable “marker” value took the form of a dial marked in degrees ranging from 0 to 100. This enabled a definite reading to be recorded at the moment when the “marker” sound was adjusted so as to become coincident with the “gingival crevice sound.”

The “beat” method was applied to the matching of the variable value (of the gingival crevice sound) for some patients and the variable “marker” (represented by the dial calibrated 0 — 100 degrees), with the sound generated by the measurement reamer approximating the root apex. Thus the “root apex sound” could be easily identified by making this sound coincident with the “marker” sound (the “marker” sound having previously been established through the matching of the “gingival crevice” sound and the “marker” sound).

Improvements were made to the oscillation circuits so that changes in the quality and type of sound were more clearly indicative of the condition of the root canal into which the probe was being inserted. In this way, the intermittent sound heard as the probe is first inserted through the opening into the tooth increases in pitch with longer sound intervals as the probe moves down the canal, until the probe nears the apex of the tooth when a continuous high-pitched sound is heard.

Improvements were made to the reamer attachment so that the reamer could be more readily attached and detached from the sensory lead of the apparatus and more easily sterilized.

A small speaker was incorporated so that the tone could be heard directly from the apparatus.

Other design improvements were carried out, rendering the controls more accessible and easier to manipulate by the practitioner.

Experiments — The preliminary tests were carried out on 100 root canals in 16 incisors, 28 bicuspid and 32 molars. The remainder of the investigation was conducted with 101 other root canals sampled from 72 patients who were undergoing root canal treatment at the Inoue Dental Clinic.

When the sound produced by the measurement reamer was heard, the “marker” dial was adjusted so that the “marker sound” became identical with the gingival crevice sound (a sound produced by inserting the reamer approximately 0.5 mm into the gingival crevice of the tooth undergoing endodontic treatment). The measurement from the marker dial where these sounds became coincident

Marker values for gingival crevice sounds obtained from 72 patients Table 1

Marker value	Number of patients	%
70	1	1.3
80	55	76.4
84	3	4.2
85	4	5.6
90	9	12.5
	72	100.0

Location of measurement reamer when measurement marker tone and gingival crevice/marker sounds were coincident Table 2

Marker value	Distant of measurement reamer from apex (mm)	Number of canals	%
70	-0.5	2	74.3
80	-0.5	1	
	±0	75	
	±0.5	2	
84	±0	3	
85	±0	5	
	±0.5	1	
90	±0	10	
	±0.5	2	

was then recorded. The marker’s sound was adjusted for each tooth sampled so that it was always identical with the “gingival crevice sound.”

The measurement reamer was then inserted into the root canal. When the sound produced by the measurement reamer became identical with the “marker” sound, the reamer was allowed to remain in place, a radiograph was taken using film marked with a grid, and the distance from the tip of the measurement reamer to the radiographic apex of the tooth was measured. The grid used for this purpose was developed at the University of Oregon and consists of a copper wire network of 1 mm mesh set in a transparent plastic sheet. It is also used in connection with long cone paralleling technique when measuring radiograph changes in alveolar bone topography in periodontal disease.

Results

Frequent recordings of gingival crevice sounds obtained from 72 patients are shown in Table 1. The gingival sounds exhibited grouping at the upper extremity of the scale, but there were differences between the individual values.

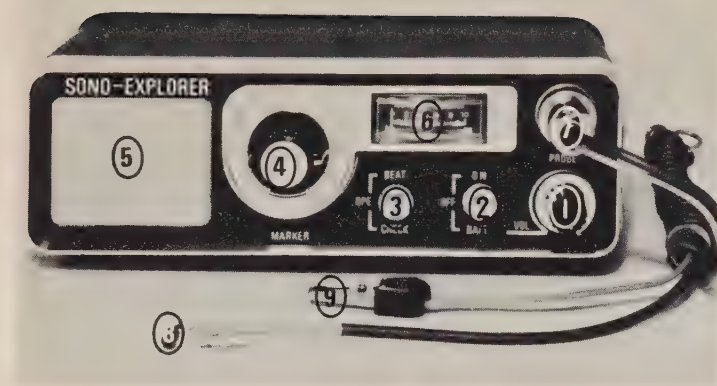


Fig 1 The Sono-Explorer unit. 1, volume control. 2, power switch. 3, marker switch 4, marker dial. 5, speaker. 6, signal power indicator. 7, probe jack. 8, measuring reamer holder. 9, oral mucous membrane conductor.

The results of measurements performed on 101 root canals are shown in Table 2. In 93 canals the tip of the instrument was flush with the radiographic apex of the tooth under treatment when the sound generated by the measurement marker coincided with the arbitrarily selected gingival crevice/marker sound. Positive or negative discrepancies between root canal length and reamer penetration were observed in the eight other canals. These findings are summarized in Table 3.

In 76 per cent of cases the marker sounds were coincident with gingival crevice sounds when a reading of 80 on the marker dial was used (Table 1). In addition, with the marker dial at a reading of 80, the tip of the measurement reamer corresponded to the apex of the tooth in 74.3 per cent of cases when the marker sounds and instrument sounds were coincident (Table 2).

It should be noted that if the marker of gingival sounds were constant (that is, if the apparatus did not have a variable marker feature) the length of the root canal could be determined accurately in the majority of cases. When the variable nature of the gingival crevice/marker sound was taken into account and utilized in the determination of root canal length, in 92 per cent of the canals sampled the lengths could be determined accurately by this method. It was verified at this time that the gingival crevice sounds were identical with the sounds produced when the measurement reamer was coincident with the root canal apex.

It is generally agreed that successful endodontic therapy requires preparation and obliteration of the root canal as far as the apical constriction — usually 0.5 — 1 mm short of the apex. Using 39 of the 75 root canals where the reamer was coincident with the radiographic apex at a marker measurement of 80, it was decided to attempt to pin-point the apical constriction as the ideal point to which the canal should be prepared. The results are shown in Table 4.

When the marker sound was set 10 degrees less than the value previously determined by the gingival crevice sound, the sounds became coincident when the tip of the reamer was located 0.5 — 1.0 mm short of the radiographic apex. This suggests that the measurement reamer may be accurately stopped short of the root apex, thus avoiding the complications attendant upon perforation or over-filling, and limiting preparation to the area of the apical constriction. It was further observed that in the cases where the sound created by the introduction of the measurement reamer into the canal exceeded the pitch of the marker sound, a perforation beyond the apex of the tooth had occurred (Table 4).

Location of measurement reamer when measurement marker tone and gingival crevice/marker sounds were coincident Table 3

Distance of measurement reamer from apex (mm)	Number of canals	%
±0	93	92.08
±0.5	8	7.92
	101	100.00

Marker value range in 39 canals when the measurement reamer penetrated short of or beyond the radiographic apex Table 4

Marker setting	Distance of measurement reamer from radiographic apex (mm)			
	-1	-0.5	+0.5	+1
60	6			
65	1			
70	9	17		
90			4	2

Location of measurement reamer in 100 root canals, reamer a constant marker resistance (R) Table 5

Distance of measurement reamer from apex (mm)	Number of canals	%
±0	75	75
±0.5	19	19
-0.5	6	6
	100	100

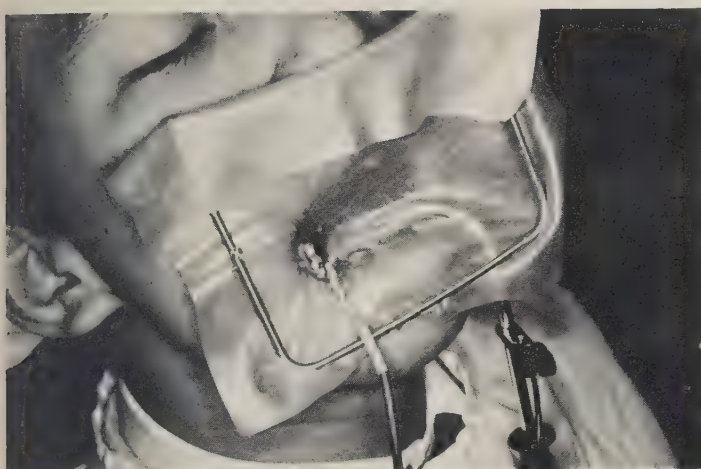
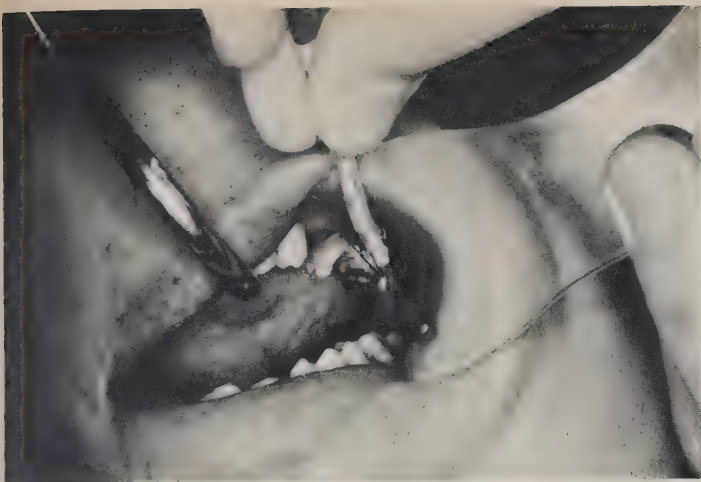


Fig 2 A, procedure for establishing the gingival crevice sound marker by placing the tip of the measurement reamer 0.5 mm beneath the gingiva adjacent to the tooth and adjusting the marker sound accordingly. B, adjusting the marker. C, the root canal is dried with an air syringe and paper points and the reamer is gradually inserted into the canal. D, the reamer should have plastic or insulated handles.

Discussion

Suzuki¹ and Sunada^{2,3} have outlined the application of the principle of electrical resistance to the measurement of root canal length. These investigations substantiated the possibility of measuring root canal length by means of electrical resistance and emphasized that (1) both the oral mucous membrane and the periodontium exhibit a consistent degree of conductivity, and (2) when the tip of the measurement reamer contacts the tissue of the root canal orifice the electrical resistance between the oral mucous membrane and the reamer is always consistent with the previously determined value regardless of the patient's age or sex. This is in accord with the findings in my preliminary experiments (Table 5).

It was observed, however, that all patients were not identical in terms of the "gingival crevice sound" produced by low-frequency oscillation. During the main experiment, nearly 25 per cent of patients developed the characteristic "gingival crevice sound" at values different from the main body of experimental patients (Table 1). If we

assume (in using low-frequency oscillation) that the oral mucous membrane and periodontium always show constant conductivity, then it may be said of the two factors — resistance (R) and capacity (C) — that may change feedback quantity (audible output), that C is the cause of the change if R remains constant. Since the resistance of the periodontium and mucous membrane were virtually identical in other experiments, the change in audible output between various persons may then be attributed to individual body capacity.

To overcome the variance between individuals or between different teeth in the same individual various modifications were incorporated into the design of the apparatus used in the experiment. In establishing the gingival crevice sound, each tooth was tested individually by placing the tip of the measurement reamer 0.5 mm beneath the gingiva adjacent to the tooth and the marker sound adjusted accordingly, eliminating any error due to a change in capacity among various teeth in the mouth. Since the marker sound was adjusted individually for each patient, the variance in capacity



A



B



C



D



E



F



G



H



I

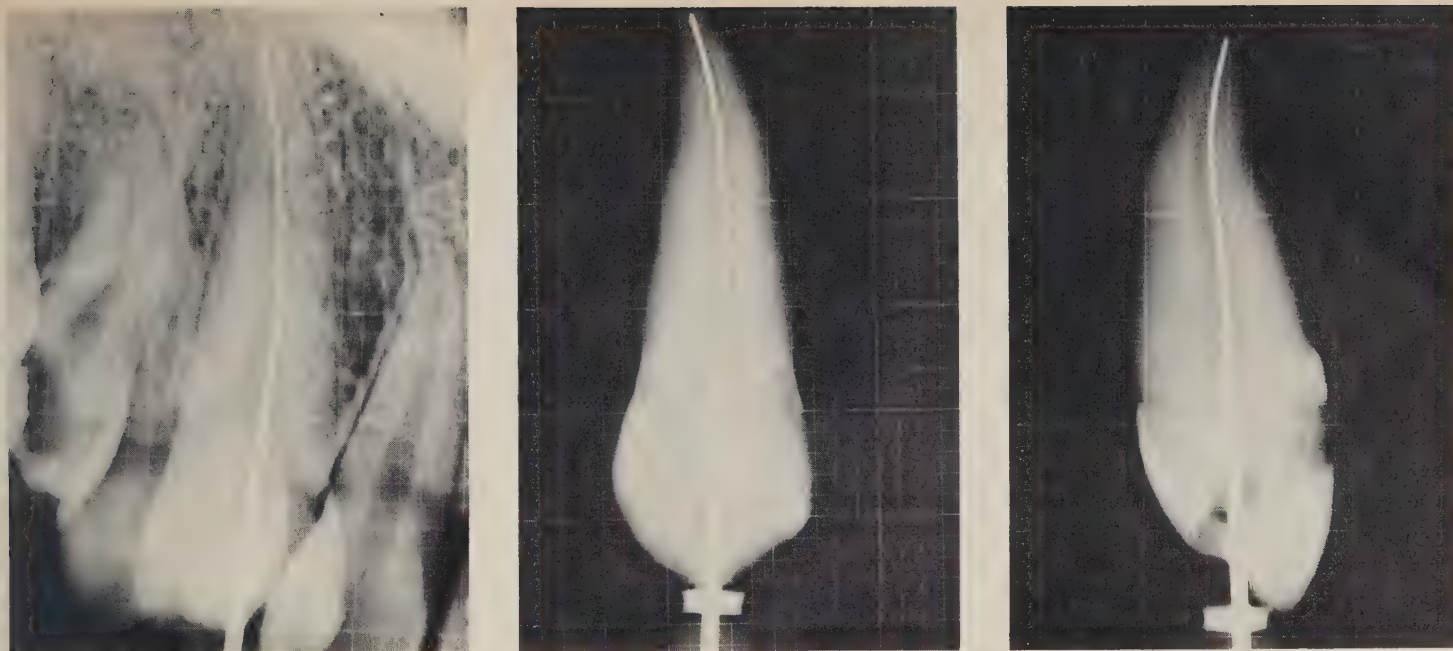


Fig 4 Before and after radiograph and x-ray photographs of a tooth that was extracted with the reamer fixed in position following determination of the root canal length. The apices of the reamer and the root match completely.

among individuals could also be taken into account. When this procedure of adjusting the marker tone individually rather than relying on a base measurement was routinely employed, the point at which the measurement reamer actually reached the root apex and the experimental determination of the length of the root canal were observed to be identical in 91 per cent of cases (Table 2).

It seems quite evident from the observations recorded in this experiment and by other workers¹⁻³ that root canal length may be accurately determined, without taking radiographs, by (1) audiometric recording of the gingival crevice sound produced by the insertion of the tip of the measurement reamer 0.5 mm beneath the gingiva of the tooth to be measured, and (2) the recording of the length of the canal when the tone produced

by the insertion of the measurement reamer into the canal produces a sound coincident with that of the previously recorded gingival crevice/marker.

In order to establish a "working length" 0.5 – 1.0 mm short of the actual apex of the tooth, the marker dial is adjusted 10 degrees less than the point where the original gingival crevice sound and marker tone become coincident. The second step remains virtually unchanged, but the gingival crevice/marker tone now becomes coincident with the instrument tone at a point 0.5 – 1.0 mm less than the actual length of the root canal. This enables the clinician to prepare the tooth to the more desirable point of apical constriction rather than the actual apex.

Preliminary experiments have indicated that by using the experimental apparatus (Sono-Explorer) and by depending upon the degree of moisture in the root canal or cavity preparation, it is possible to differentiate necrotic dentine from healthy dentine. This hypothesis is supported by the principle that dry, healthy dentine is non-conductive while necrotic and moisture-containing dentine is a good electrical conductor. It is believed that electrical resistance depends upon the moisture level in dentine and that conduction is mediated by its tubule and fibril components.⁴ Thus there is an easily detectable difference in the sounds derived from healthy and from necrotic dentine when low-frequency oscillation is used to produce the sound.

The Sono-Explorer is also useful for determining microscopic pulp exposures during cavity prepara-

Fig 3 A, radiograph taken when the sound of the marker, with the dial reading previously reduced by about 10 graduations, and the sound from the reamer inserted into the root canal were in perfect accord. The tip of the reamer is within 0.5 mm of the radiographic apex. B, radiograph taken when the marker sound and the sound from the reamer inserted into the root canal were in perfect accord. The tip of the reamer has reached the radiographic apex. C, radiograph taken when the sound from the reamer inserted into the root canal exceeded that of the marker. The reamer has penetrated about 1mm beyond the radiographic apex. D, E, F, G, H, I, radiographs taken when the marker sound and the reamer sound were in perfect accord.

tion. Such lesions are often very difficult to locate due to pulpal ischaemia; yet if the measurement reamer is first placed on firm dentine and then in the area of a suspected exposure, there is an audible difference in the sound registered from hard dentine and the softer pulp.

Conclusions

Audiometric experiments were conducted in 201 root canals with a low-frequency oscillator (Sono-Explorer) with the purpose of examining sound emanating from the gingiva, oral mucous membrane and the periodontium at the apical orifice of the root canal. The following results were obtained:

1. When the tip of the measurement reamer penetrated to the apical region of the root canal, the sound produced was identical with that elicited at the gingival sulcus, regardless of the patient's age or sex, or the tooth under consideration.

2. Sounds elicited by the measurement reamer varied with the contents of the canal and the viability of its dentine wall.

3. When the measurement reamer was 0.5 — 1.0 mm short of the root apex, the sound produced was about 10 degrees lower than the marker sound produced at the gingiva. When the measurement reamer was forced beyond the apex, the sound exceeded the marker sound.

Accordingly, root canal length may be audiometrically determined by (1) recording the sound

produced at the gingiva of the tooth under treatment by means of adjustment of the marker dial to obtain coincident tones (determining the gingival sulcus/marker tone), and (2) marking the length of the measurement reamer and subsequently removing it from the root canal when the sound produced by the instrument becomes identical with the marker tone. A working length 0.5 — 1.0 mm shorter than the actual root canal length may also be determined by adjusting the marker dial 10 degrees lower than the gingival crevice sound and then following the same procedure as for determination of absolute root canal length.

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An examination of root canal anatomy of primary teeth

W. J. Simpson, DDS, MSc
Edmonton

Two materials were used to study pulp anatomy in 150 extracted primary teeth. In 100 teeth the pulps were macerated and the pulp chambers and canals were subsequently injected with tinted silicone elastomer. The other 50 teeth were replicated in clear epoxy resin with red epoxy pulps. Both methods revealed extremely fine root canal ramifications and accessory root canals but no accessory canals were found in the furcation regions of primary molars included in this study.

L'auteur utilisa deux matériaux pour étudier l'anatomie de la pulpe de 150 dents temporaires extraites. Les pulpes de 100 dents furent macérées et, par la suite, les chambres pulpaires et les canaux reçurent des injections d'élastomère de silicone teinté. Des répliques des 50 autres dents furent exécutées en utilisant de la résine Epoxy transparente montrant les pulpes en résine Epoxy rouge. Les deux méthodes révélèrent la présence de canaux accessoires et de ramifications extrêmement fines des canaux, mais aucun canal accessoire ne fut découvert dans la région de bifurcation des molaires temporaires comprises dans cette étude.

In a long-term clinical and radiographic study of teeth subjected to pulpotomy (unpublished), many of the failures were attributed to bone pathology in the furcation area of primary molars. In view of this finding, a study of the root canals of primary molars was undertaken to discover whether the existence of accessory canals might have a bearing on the preponderance of furcation involvements. A method was sought for demonstrating pulp anatomy in relation to the tooth as a whole, so that all the ramifications of the root canals might be seen. Such a method would not only satisfy the initial objective of revealing accessory canals in the furcation area, but would also provide excellent models for teaching tooth anatomy and for demonstrating problems of endodontic therapy arising from anatomical variations in the pulps of teeth which are clinically undetectable.

Early workers had great difficulty in reproducing the fine ramifications of root canals. Hess¹ reproduced canals in vulcanite, but his models lacked the coronal portion of the pulp and, because the exterior of the tooth was decalcified, the relationship of the tooth to the pulp was lost.

In the past, teeth were sectioned at various points and the root canals were filled with wax. This method had serious limitations, for a series of sections was required to show, at best, a very limited conception of the tooth's internal anatomy, while most of the relationship of the external structure to the pulp was lost.



Fig 1 Radiographs of primary molars injected with silastic elastomer tinted with red lead.

Scott and Symons² point out that "the blood supply to the pulp is very rich; it is carried by arterioles which pass through the apical foramina in bundles of three or more. These vessels tend to run in the long axis of the pulp giving off branches which anastomose with those of adjacent arterioles and others entering the pulp by separate root canals. The major branching and anastomosis take place in the pulp chamber. Though the main vascular supply of the pulp is through the apical foramina it is not uncommon, especially in the region of root division in multi-rooted teeth, to find major vessels passing through the dentine to supply one root canal. Smaller vessels running between root canals and periodontal membrane are fairly common." These observations were made microscopically on ground sections of both permanent and primary molars.

Winter³ examined 100 cariously exposed or abscessed primary molars after macerating their pulps with papaine hydrochloride. He placed 2 per cent methyl violet dye in the pulp chambers and sealed the teeth in a vacuum chamber. He then evacuated the chamber, applying a negative pressure of 600 mm Hg to the external root surfaces. Accessory canals were identified by the violet staining of the root surfaces. Five of the molars with accessory canals were sectioned and examined histologically to determine whether resorption plays a role in the formation of these minute accessory canals. Winter observed Howship's lacunae covered by a thin layer of calcified repair tissue lining the wall of each accessory canal, showing that active resorption and repair had occurred. Evidence from this study suggested that at least 23 per cent of the teeth had accessory canals which could account for clinical abscess formation in the furcation. Winter also observed that the accessory

canals rarely emerged at the furcation, but more commonly opened onto the middle third of the interradicular root surface.

Winter and Kramer⁴ monitored histologically the sequence of events following severe injury of the pulps of lower second primary molars in kittens. They found intraradicular abscess formation, with maximal rarefaction at the bifurcation. Many of the teeth studied from the 13 kittens had an accessory canal running from the floor of the pulp chamber to the bifurcation. Each canal carried a relatively large blood vessel and a small amount of loose connective tissue.

Nineteen lower first primary molars without exposed pulps were also examined. Ten of these teeth showed accessory canals similar to those found in the second molars. In all but one of these teeth, the pulp and the tissues in the bifurcation and apical regions were normal.

Winter and Kramer concluded that such accessory canals can facilitate the spread of inflammation from the pulp to the bifurcation. Though children's teeth probably have fewer accessory canals than those of kittens, they attributed some instances of interradicular bone rarefaction following pulp infection to the spread of infection and consequent inflammation via the accessory canals.

Rosenstiel,⁵ who reproduced teeth with pulps from polyester resin, pioneered the techniques for the replication of teeth which reveal pulp anatomy in its true relationship to the rest of the tooth. Barker et al^{6,7} subsequently developed two methods for injecting pulp chambers and canals. These techniques are fully described in their publications. The first involves maceration of the pulp with a papain hydrochloride solution, as recommended by Rosenstiel,⁵ and subsequent injection of a mixture of thin viscosity silastic elastomer and



Fig 2 Primary molar teeth replicated in epoxy resin.

red lead. The teeth are then radiographed to reveal the radiopaque material in the pulp chamber and root canals. The second method ^{6,7} consists of reproducing teeth in clear epoxy resin with red epoxy resin pulps.

Materials and methods

Extracted primary molars and a few primary incisors and cuspids were collected from the Paedodontic Clinic in the Faculty of Dentistry, University of Sydney, Australia. Two methods were utilized to study the pulp anatomy of these teeth as follows:

One hundred primary molars with no evident root resorption were restored with sticky wax or dental cement. As the teeth were collected at intervals from the Dental Hospital, data concerning the vitality of the pulps were unavailable, but most of the teeth were badly decayed and most pulps were exposed. The sample comprised 26 lower second molars, 24 upper second molars, 25 lower first molars and 25 upper first molars. A good seal was necessary to withstand the high pressure of injection. The method of Barker et al ^{6,7} was used for maceration of the pulps with papain hydrochloride solution and subsequent injection of the pulp chambers and canals with silicone elastomer to which red lead had been added. The teeth were then examined for extrusion of material and were radiographed to detect any accessory canals (Fig 1).

The crowns of 50 extracted primary teeth were restored with dental cement to return them to their original anatomy. These teeth were obtained

in the same manner as those of the first group. The sample comprised 10 upper second molars, 10 lower second molars, nine upper first molars, 11 lower first molars, six upper cuspids and four lower cuspids. Amalgam was rejected as a restorative material because it tends to stain the epoxy resin used in the replication. After crown restoration, the pulps of the teeth were macerated with papaine hydrochloride solution and the method of Barker et al ^{6,7} was used to inject the empty chambers and canals with red epoxy resin. A two-section mould of silastic was then made of each tooth. The tooth-containing portion of the mould was immersed in 50 per cent hydrochloric acid. Frequent syringing of acid through the mould brought about complete dissolution of the teeth in a few days. After carefully washing and drying the moulds, clear epoxy resin was introduced and allowed to set. The finished epoxy teeth were subjected to minimal trimming to remove flash and extruded red epoxy resin. All trimming was carried out under water. The epoxy teeth were then examined for the presence of accessory root canals, paying particular attention to the furcation regions of molars. The tooth replicas were photographed under liquid paraffin to overcome optical distortion of the pulp canals caused by the rounded surfaces of the models (Fig 2). A few tooth replicas were mounted and immersed in liquid paraffin in individual Perspex boxes for use in the demonstration of pulp anatomy.

Results

Both methods of injection reached extremely fine root canal ramifications, and many variations

were seen. Numerous accessory root canals were revealed, but none were found in the furcation regions of the 150 teeth under study. Furthermore, the majority of these accessory canals were seen in the apical third of the roots.

Discussion and conclusions

In view of the findings by Winter,³ Winter and Kramer⁴ and the statements of Scott and Symons,² one must conclude that the injection technique used in this investigation was not sufficiently refined to confirm the existence of the kind of accessory root canals which seem to be responsible for the passage of infection into the furcation region of primary molars. Extremely fine accessory canals in the apical regions of both human and dog teeth have been revealed by injection, and one might assume that a canal with a relatively large blood vessel and some loose connective tissue would be large enough to be demonstrated by this method.

On the other hand, histologic searching for canals presents serious disadvantages, for material is lost in the sectioning, even when large numbers of sections of many teeth are examined.

It had been my intention to study a large sample of human primary molars without pulp involvement, using the same injection technique, but unfortunately the delivery of the teeth was delayed and this portion of the project had to be abandoned. It would be interesting to examine normal primary molars using both Winter's method and a better injection method. The two approaches have in common the method of pulp maceration and one must therefore assume that the injected material cannot reach canals that can be revealed by a dye.

The replication of teeth with epoxy resin, despite its failure to demonstrate the presence of accessory canals in the furcation region of primary molars, provides a most satisfactory means for demonstrating tooth anatomy, including general pulp morphology.

This project received financial assistance from Dean Noel D. Martin, Faculty of Dentistry, Sydney University, Australia. The work was carried out in the Department of Anatomy, Faculty of Medicine, Sydney University, with the assistance of Associate Professor W.B.C. Barker and the technical staff of the department, and with the permission of Professor W. McIntosh, chairman of the department.

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Annotations

Advanced Periodontal Disease: Surgical and Prosthetic Management

J. F. Prichard. Ed 2. Toronto, W. B. Saunders Company, 1972. 990 p. Illus. \$36.05

Dr. Prichard discusses aetiology, diagnosis, prognosis, conservative and surgical treatment — everything the busy practitioner needs to know for effective management. Case histories are drawn from the author's own practice to show each step in treatment, as well as how the prognosis for individual teeth and the entire dentition is affected by periodontal disease. Individual chapters delineate surgical procedures, including gingival surgery, surgery for intrabony defects, mucogingival surgery, management of periodontal abscesses and periodontal osseous surgery.

All chapters have been revised for this edition, and two have been added: The Periodontal-Pulpal Quandary and Management of Periodontal Disease in the Aged Patient. The chapter on prosthetic management of the periodontal patient includes emphasis on prosthetic treatment that the general practitioner can perform without special training. Dr. Prichard has also added detailed information on radiographic interpretation.

Surgical Treatment of Developmental Jaw Deformities

E. C. Hinds and J. N. Kent. St. Louis, The C. V. Mosby Company, 1972. 258 p. Illus. \$34.15

This text discusses all types of dentofacial deformities with respect to surgical technique, cephalometrics, treatment planning, role of the orthodontist and other specialists, complications, and follow-up.

Notes on Dental Materials

E. C. Combe. Edinburgh and London, Churchill Livingstone, 1972. (Available from Longman Canada Limited, Toronto) 265 p. Illus. \$10.50

The author gives factual knowledge about dental materials, based on the assumption that the reader is familiar with the techniques of using materials in a dental office and laboratory.

The book is divided into two sections: dental material science and applied dental materials. The first section deals with the structure of matter, properties of materials, polymers, metals, alloys, corrosion, ceramics, composites.

Newer dental materials are also discussed, including polycarboxylate cements, composites, spherical amalgam alloys, poly-ether impression materials, polycarbonates, aluminous porcelain, and epimines. The discussion of silicates takes account of the recent extensive research on this subject.

Nutrient Value of Some Common Foods

Canada. Department of National Health and Welfare, 1971. Canada, Information Canada. English and French. 26 p.

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The Combination Technique in Orthodontic Practice

Maxwell S. Fogel and Jack M. Magill. Toronto, J. B. Lippincott Company, 1972. 246 p. Illus. \$28.00

This book describes in step-by-step fashion how to combine the light-wire and edgewise techniques. It covers the full range of orthodontic problems. Both extraction and non-extraction cases are included. Routine procedures for controlled space closure, simple and realistic use of Class III mechanics with light-wire forces, positive torquing devices and uprighting and positive molar control are described.

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Clinical Periodontology

Irving Glickman. Ed 4. Philadelphia and London, W. B. Saunders Company, 1972. (Available from W. B. Saunders Company Canada Limited, Toronto) 1,017 p. Illus. \$29.90

The fourth edition of this classic periodontal text has an entirely new section on preventive periodontics which outlines effective programs of plaque control. Chapters on occlusion and occlusal adjustment have been extensively revised to incorporate the author's recent research with intra-oral telemetry. Material on treatment has been expanded to emphasize scaling and curettage, fundamental surgical procedures, and the importance of early treatment.

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ONTARIO — London area. Wonderful opportunity for associate to take over and assume practice. Health reasons. Reply CDA Box No. 1317 or telephone: 527-1530.

ONTARIO — Toronto. Associate with view to partnership wanted for busy Metropolitan Toronto. Periodontics practice. Starting time flexible. Reply CDA Box No. 1318.

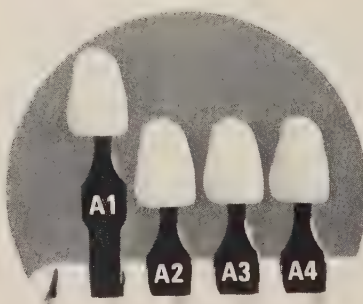
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BRITISH COLUMBIA — Vancouver. Director of Dental Services required for University Affiliated Community Health Centre. Must be graduate of accredited program, able to obtain Provincial License and interested in a preventive approach. Salary Negotiable. Inquiries with curriculum vitae to REACH Centre, 1136 Commercial Drive, Vancouver 6, B.C.

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BRITISH COLUMBIA — Richmond. Excellent opportunity to enter expanding family practice in rapidly growing suburb of Vancouver. Young, experienced dentist preferred. Intention is to share my practice with the right individual. Serious inquiries only. Reply CDA Box No. 1311.

ONTARIO — Cannington. Dental Surgeon required immediately for Cannington Medical Centre. This is a new medical building for 2 general practitioners, dentist, situated in Cannington Village (population 1,400) 70 miles northeast of Toronto in prosperous well populated mainly farming area which is developing rapidly. Vast scope. Apply: Box 310, Cannington, Ontario. Tel: 705-432-2569.

ONTARIO — Cambridge. Ontario city of 65,000, one hour from Toronto, has no oral surgeon or orthodontist. Established dental clinic has rental space for one or both. Please reply CDA Box No. 1312.

ONTARIO — Dental Hygienist required for 1973-74 school year, Borough of Scarborough — Health Department. Commencing September 4, 1973 to work in school programme of education and inspection during school days only. Starting salary up to \$7885 depending on qualifications and experience. Comprehensive range of fringe benefits available. Apply in writing only: Personnel Commissioner, Borough of Scarborough, 2001 Eglinton Avenue East, Scarborough, Ontario.

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ONTARIO — Public Health Dentist. To replace retiring Director of Educational-Preventive Dental Programs for elementary school populations in four Northern Ontario Health Units. Requirements: Ontario license and diploma or degree in dental public health. To reside in Sudbury. Salary open and competitive. Comprehensive fringe benefits. Submit resume and application to: Dr. J.B. Cook, M.O.H., Sudbury District Health Unit, 1300 Paris Crescent, Sudbury, Ont.

MANITOBA — Winnipeg. Oral surgeon certified to practise in Manitoba required for busy Winnipeg practice. Object partnership. Please submit qualifications and address to CDA Box No. 1165.

OPPORTUNITIES WANTED

WANTED — Locum for the month of November in Victoria. Reply CDA Box No. 1303.

BRITISH COLUMBIA — Vancouver. Recent graduate currently working in Vancouver wishes to purchase dental practice from retiring dentist in Vancouver or Greater Vancouver area. Reply Box 35537, Postal Station E, 2021 West 42nd Ave. Vancouver 13, B.C.

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Basic duties will include examination, diagnosis, treatment planning, and referral of children to dental auxiliaries and dentists. Dental treatment services for children will also be carried out by the incumbents of these positions.

QUALIFICATIONS FOR LEVEL I:

- D.D.S. or D.M.D. degree
- eligible for registration with college of Dental Surgeons of Saskatchewan
- practice experience related to Pedodontics

QUALIFICATIONS FOR LEVEL II:

- as in Level I plus one of the following —
- Formal Postgraduate training in Pedodontics. Diploma or Masters
- Formal Postgraduate training in Orthodontics. Diploma or Masters
- Formal Postgraduate training in Public Health or Community Dentistry. Diploma or Masters.

REMUNERATION — Commensurate with qualifications and experience.

Graduates of U.S. and Canadian Dental Schools can register in Saskatchewan without further examination. Boards not required.

For further information and application forms, write to:

Director, Dental Health Division
Department of Public Health
3211 Albert Street
Regina, Saskatchewan, Canada



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Dental Health Unit

Standards and Consultants Directorate

Health Programs Branch

Department of National Health and Welfare

Ottawa, Ontario

The Dental Health Unit of the Standards and Consultants Directorate is responsible for the provision of specialized advice and information on all matters relating to dental health to the Minister, Deputy Minister and to all departmental management levels of the Department of National Health and Welfare, and elsewhere as required.

DUTIES

To organize and implement the activities of the Dental Health Unit in order that decisions and policies may be based on knowledge of current dental health needs, trends and developments by establishing effective channels of communication with dental and parodontal organizations; provide consultative, advisory and information services to all departmental levels of management and, on request, to other federal government departments, provincial departments, universities and with vocational schools and community colleges training parodontal personnel; liaises between the various Canadian jurisdictions involved in dental health; reviews applications from the professional and technical point of view for funding of dentally related projects under the National Health Grant; acts as chairman of the Advisory Committee on Dental Health, Department of National Health and Welfare which includes provincial representatives and is established to assist, advise and make recommendations to the Minister of National Health and Welfare on matters relating to dental and oral health in Canada; organizes and acts as chairman for a Standing Committee on Dental Health which is responsible for the continuing review of the federal role in dental health to insure that all resources of federal programs operate in support of federal and branch objectives and performs other related duties as required.

QUALIFICATIONS

Graduation from a recognized school of dentistry. Evidence of satisfactory experience and performance in the planning and administration of community dental health programs which incorporate preventive, therapeutic and educational services.

Eligibility for a license to practice dentistry in a Province of Canada is a requirement.

LANGUAGE REQUIREMENTS

Knowledge of both the English and French languages is required. Unilingual persons may also apply in this competition. They must however, indicate in writing, their willingness to undertake continuous language training at public expense for a period of up to twelve months. Such training shall be undertaken immediately at the time of conditional appointment, in or through the Public Service Commission's Language Bureau and at locations specified by the Public Service Commission.

The Public Service Commission will seek evidence of the likely capacity of unilingual candidates from outside the Public Service to become bilingual.

To ensure consideration applications or curriculum vitae must be completed in detail and sent by October 3, 1973 to:

Sciences and Technology Program,
Public Service Commission of Canada,
Ottawa, Ontario K1A 0M7

Please quote reference number 73-1670 in all correspondence.

Appointments as a result of this competition are subject to the provisions of the Public Service Employment Act.



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Direction des normes et de la consultation

Programmes de la santé

Ministère de la Santé nationale et du Bien-être social

OTTAWA (Ontario)

Le ministre, le sous-ministre et les cadres du ministère de la Santé nationale et du Bien-être social, de même que d'autres organismes, comptent sur le service d'hygiène dentaire de la Direction des normes et de la consultation pour les conseiller et les informer sur toutes les questions d'hygiène dentaire.

FONCTIONS:

Voir à l'établissement de communications efficaces avec les organisations dentaires et parodontaires de même qu'à l'organisation interne des opérations du service en vue d'obtenir la connaissance — essentielle à l'énoncé des politiques et à la prise de décision — des besoins courants, des tendances et des faits nouveaux en hygiène dentaire; informer et conseiller les cadres du ministère et, sur demande, les autres ministères fédéraux, provinciaux, les universités, les écoles professionnelles, les collèges communautaires, les CEGEP s'occupant de la formation du personnel parodontaire; assurer la liaison entre les autorités compétentes en matière d'hygiène dentaire; donner un avis professionnel et technique sur des projets relatifs à l'art dentaire et devant faire l'objet de subventions à la santé; présider le comité consultatif national de l'hygiène dentaire du ministère de la Santé nationale et du Bien-être social qui comprend des représentants provinciaux et doit assister et conseiller le ministre et lui soumettre des recommandations sur les questions d'hygiène dentaire et buccale; organiser et présider le comité permanent de l'hygiène dentaire chargé de revoir continuellement le rôle du gouvernement fédéral en matière d'hygiène dentaire de façon que toutes les ressources soient utilisées pour réaliser les objectifs des programmes fédéraux de la santé; accomplir des tâches connexes.

CONDITIONS DE CANDIDATURE:

Diplôme d'une école d'art dentaire reconnue.

Admissibilité exerce l'art dentaire dans l'une des provinces du Canada.

Expérience suffisante de la planification et de l'administration de programmes communautaires d'hygiène dentaire, notamment des services de prévention, thérapeutiques et éducationnels.

EXIGENCES LINGUISTIQUES

La connaissance de l'anglais et du français est essentielle.

Ce concours est aussi ouvert aux unilingues. Ils doivent cependant indiquer par écrit, qu'ils sont disposés, afin de satisfaire aux exigences linguistiques du poste, à entreprendre aux frais de l'Etat, immédiatement après leur nomination conditionnelle, et à plein temps, un cours de langue dispensé par le Bureau des langues de la Commission ou par un organisme approuvé par ce dernier. Ce cours pourra durer jusqu'à douze mois et la Commission de la Fonction publique en précisera le lieu.

La commission de la Fonction publique s'assurera que les candidats unilingues de l'extérieur de la Fonction publique ont les aptitudes voulues pour devenir bilingues.

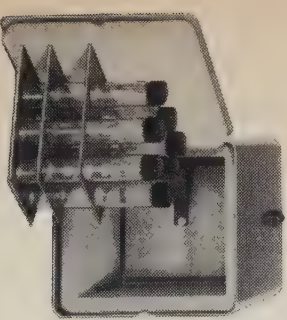
Les demandes d'emploi ou les curriculum vitae doivent parvenir, avant le 3 octobre 1973, à l'adresse suivante:

CADRES DES SCIENCES ET DE LA
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DU CANADA
OTTAWA (ONTARIO) K1A 0M7

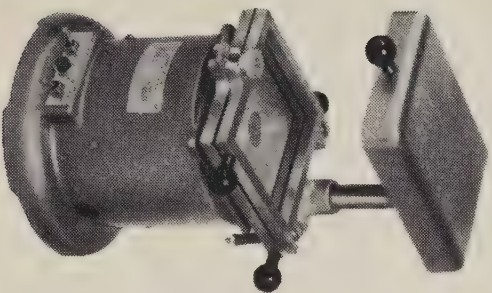
Référence à rappeler: 73-1670.

Les dispositions de la Loi sur l'emploi dans la Fonction publique s'appliquent aux nominations dans le cadre de ce concours.

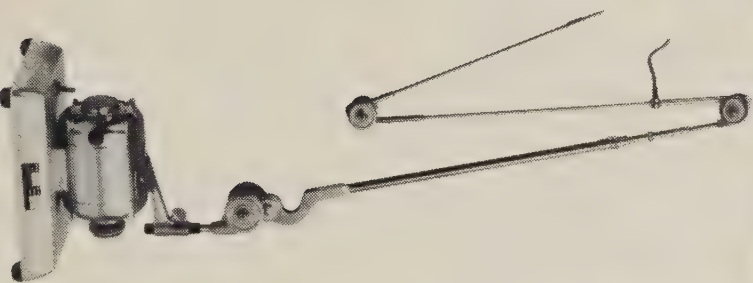
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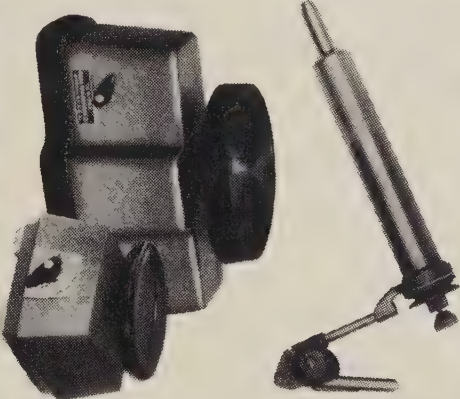


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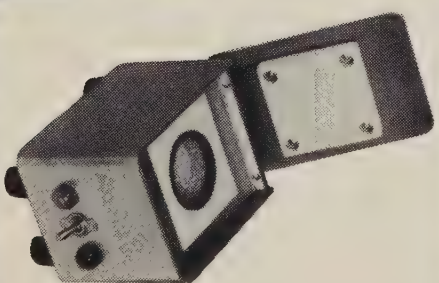


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Forward application for employment, Form PSC 367-401, available at Post Offices, Canada Manpower Centres and the Public Service Commission of Canada to: Mrs. F. M. Thexton, Public Service Commission, P.O. Box 8, Toronto-Dominion Centre, Toronto, Ontario, M5K 1A6, before September 30, 1973. Please quote Competition 73-T-503.

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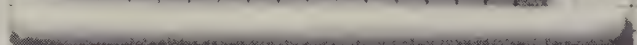
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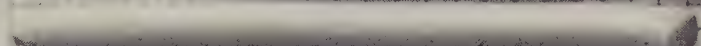
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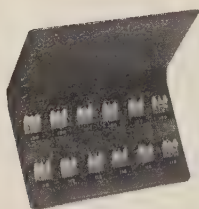
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JOURNAL

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de l'Association Dentaire Canadienne
Oct 1973/Volume 39/No 10

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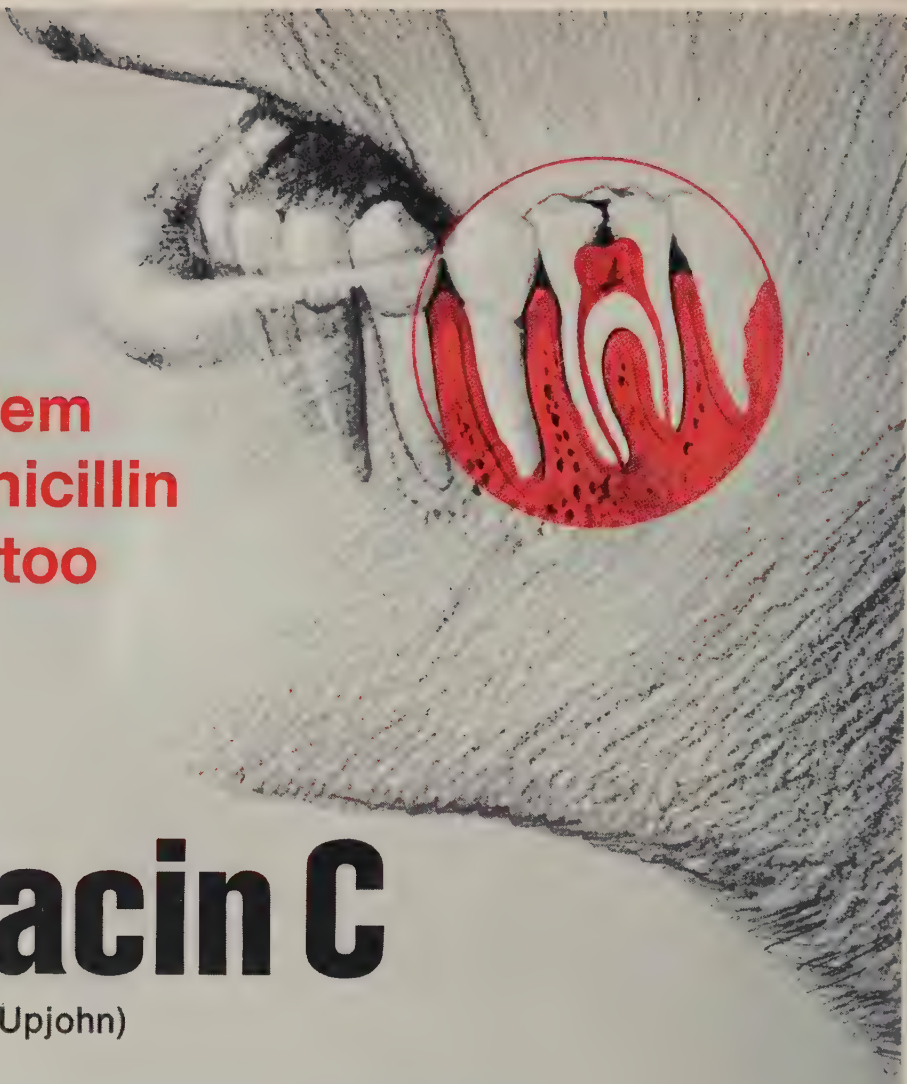
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Canadian Dental Association

1974 Windsor, Ont, Oct 2-5

1975 St John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1974 London, England, Sept 8-14

1975 Chicago, USA, Oct 26-30

Royal College of Dentists of Canada

Part I examinations (Basic Sciences)
June 24, 1974. Applications and \$100 fee must be received before Mar 31, 1974.

Part II Examinations (Oral) Dec. 6-7, 1974. Eligibility is based on successful completion of the Part I Examinations, plus submission of required case histories, and the lapse of five years since the candidate began his graduate training. Written intent to sit this examination with \$100 examination fee must be received before Mar 31, 1974.

Application forms for the Part I Examinations and further information may be obtained from J. E. Speck, Secretary-Registrar-Treasurer, Suite 614, 170 St. George St, Toronto, Ont. M5R 2M8.

Canadian Meetings

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 27-28, 1973. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, Que.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 29-31, 1973. Miss M. Komarnicka, 4166 St. Catherine St. W, Montreal 215, Que.

Newfoundland Dental Association, at Holiday Inn, St. John's Nfld. Nov 7-10, 1973. Gordon Anthony, PO Box 9505, St. John's, Nfld.

The Association of Canadian Faculties of Dentistry/L'Association des Facultés Dentaires du Canada, in Edmonton, Alberta. Nov 21-22, 1973. Dr. G. W. Myers, 3036 Dentistry/Pharmacy Centre, University of Alberta, Edmonton, Alberta T6G 2H7.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St. Toronto 180, Ont. (Accredited by Academy of General Dentistry.)

Vancouver & District Dental Society, at Hotel Vancouver, Vancouver. Dec 7-8, 1973. Vancouver & District Dental Society, Suite 325, 925 W George St, Vancouver 1, BC.

Manitoba Dental Association, at Red Oak Inn, Brandon, Man. Jan 18-19, 1974. G.M. Nowazek, 308 Kennedy St., Winnipeg, Man. R3B 2M6

Winter Medical-Dental Assembly, at Mont Gabriel, Que. Mar 2-9, 1974. A. T. Wachna, 504 Medical Arts Bldg, Windsor 14, Ont.

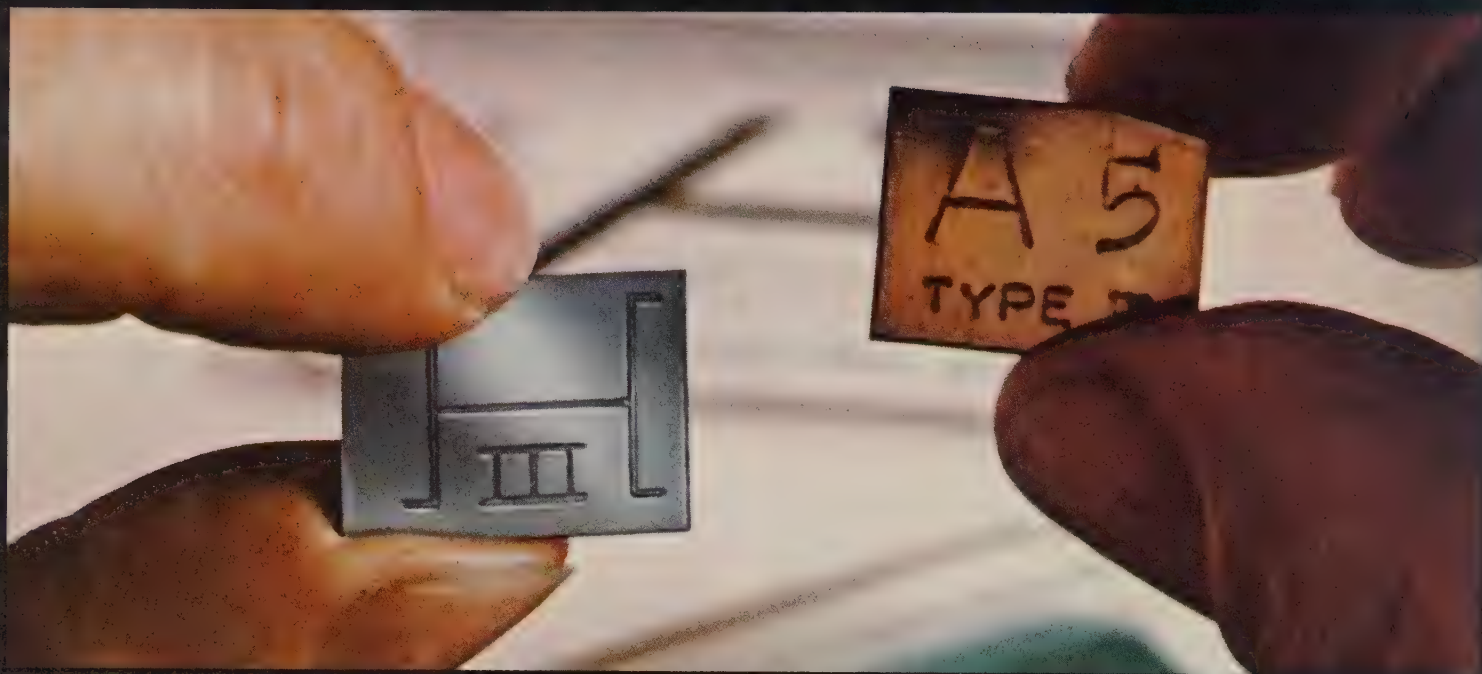
College of Dental Surgeons of Saskatchewan, at Moose Jaw, Apr 25-27, 1974. R. G. Tessier, 310 Hammond Bldg, Moose Jaw, Sask.

Les Journées Dentaire du Québec, à l'Hôtel Bonaventure, Montréal. 1-3 mai 1974. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. May 1-3, 1974. Mr. de Bastien, 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Hyatt Regency, Vancouver. May 1-4, 1974. K.L. Croft, Suite 325, 925 W Georgia St, Vancouver 1, BC.

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Ontario Chapter, Canadian Society of Dentistry for Children, at Four Seasons-Sheraton Hotel, Toronto. May 12, 1974. A.F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 12-15, 1974. Mrs. W. C. Durham, 230 St. George St, Toronto, Ont, M5R 2P1.

Alberta Dental Association at Palliser Hotel, Calgary. May 30-31, 1974. J. R. Duncan, 306, 1711-4th St. S.W., Calgary, Alta.

Sixth International Conference on Oral Biology, at Toronto, June 3-5, 1974. G. S. Beagrie, Faculty of Dentistry, 124 Edward St., Toronto, Ont. M5G 1G6.

The Association of Canadian Faculties of Dentistry/L'Association des Facultés Dentaires du Canada, at Digby Pines, Digby, Nova Scotia. June 20-21, 1974. Dr. G.W. Myers, 3036 Dentistry/Pharmacy Centre, University of Alberta, Edmonton, Alberta, T6G 2H7.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R. C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Society of Oral Surgeons, at Toronto. Sept 28 — Oct 1, 1974. H. Phillips, 99 Avenue Rd. Ste 810, Toronto, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor, Ont. Oct 2-5, 1974. J. M. Conchie, 14265 — 56th Ave, Surrey, BC.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 26-27, 1974. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, P.Q.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 28-30, 1974. Miss M. Komarnicka, 4166 St Catherine St W, Montreal 215, P.Q.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

Les Journées Dentaires du Québec, à l'Hôtel Bonaventure, Montréal. 30 avril-2 mai 1975. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. Apr 30-May 2, 1975. Mr. de Bastien, 4290 Beaubien St E, Montreal 409, Que.

Canadian Academy of Paedodontics/Canadian Congress of Dentistry for Children, at Four Seasons-Sheraton, Toronto, May 17-18, 1975. J. Duncan, 155 James St. S, Suite 130, Hamilton 10, Ont.

College of Dental Surgeons of Saskatchewan, at Saskatoon. June 11-14, 1975. E. Freidin, 507-105-21 St. E, Saskatoon, Sask.

Canadian Society of Public Health Dentists, at St John's Nfld. Aug 17-20, 1975. J. M. Conchie, 14265 - 56th Ave., Surrey, B.C.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 25-26, 1975. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, P.Q.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 27-29, 1975. Miss M. Komarnicka, 4166 St Catherine St W, Montreal 215, P.Q.

International Meetings

Portuguese Congress of Stomatology, at Lisbon, Portugal. Oct 17-20, 1973. Secretaria Geral do VI Congresso Português de Estomatologia, Av. R. Amélia-36-R/C, Dt^o, Lisboa -5, Portugal.

New York State Academy of Dental Practice, at Four Seasons-Sheraton Hotel, Toronto. Oct 19-20, 1973. Executive Secretary, 1500 Brighton Henrietta Town Line Road, Rochester, NY 14623, USA.

International Symposium on the Immunoglobulin A System, at University of Alabama, Birmingham. Oct 23-25, 1973. F. W. Kraus, Box 103, University Station, Birmingham, Ala 35294, USA.

American Academy of Periodontology, at San Antonio, Texas. Oct 24-27, 1973. Academy of Periodontology, Room 924, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Argentine-Brazilian-Uruguayan Dental Congress, at Buenos Aires. Oct 28-31, 1973. S. A. Coninter, Reconquista 533, Buenos Aires, Argentina

American Dental Association, at Houston, Texas. Oct 28-Nov 1, 1973. C. G. Watson, 211 East Chicago Ave, Chicago, Ill 60611, USA.

Association of American Women Dentists, at Houston Oaks Hotel, Houston, Texas. Oct 30, 1973. Hazel F. Haughey, Cold Brook Rd, Wilmington, Vermont 05363, USA.

Association Dentaire Francaise, à Parc des Expositions, Porte de Versailles, Paris, 14-18 nov 1973. Jacques Charon, 22 avenue de Villiers, 75-Paris 17eme, France.

American Institute of Oral Biology, at Spa Hotel, Palm Springs, Calif. Nov 16-20, 1973. Membership Chairman, P.O. Box 897, Glendora, Calif 91740, USA.

Associação Paulista de Cirurgiões Dentistas, at Sao Paulo, Brazil. Jan 20-25, 1974. Dr. R. Todescan, 389 Bela Vista, Caixa Postal 2523-01321, Sao Paulo, Brazil.

Jamaica Dental Association, at Sheraton Kingston Hotel, Jamaica. Jan 27 - Feb 1, 1974 Keith E. R. Young, P.O. Box 19, Kingston 5, Jamaica.

Prosthodontic Society of South Africa, at Johannesburg, S. Africa. Apr 1-5, 1974. Congress Secretary, Private Bag 1, Houghton, Transvaal, S Africa.

German Dental Congress, at Hamburg, Germany. Apr 15-28, 1974. Bundesverband der Deutschen Zahnärzte e.V., 5 Köln 41, Postfach 410168, Germany.

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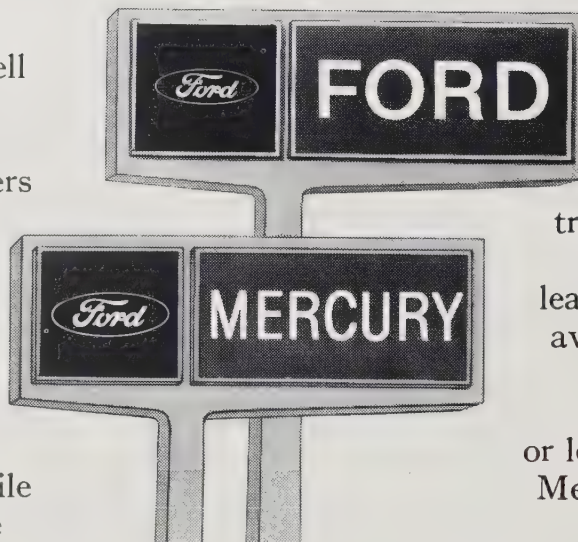
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Letters/Courrier

The journal devotes this section to comments by readers on topics of current interest to dentistry. The editor reserves the right to edit all communications to fit available space. Printed communications do not necessarily reflect the opinion or official policy of the Canadian Dental Association. Your participation in this section is invited.

Cette partie du Journal est consacrée aux communications des lecteurs sur les questions d'actualité dentaire. La rédaction se réserve le droit d'adapter les communications à l'espace disponible. Les communications publiées ne représentent pas forcément l'opinion ou la politique officielle de l'Association dentaire canadienne. Vous êtes invités à participer à cette section du Journal.

Anticariogenic effect of dicalcium phosphate dihydrate chewing gum

After publication of the study "Anticariogenic Effect of Dicalcium phosphate Dihydrate Chewing Gum: Results After Two Years" (J. Can. Dent.

Assoc., 38:6, 213, June, 1972), several deficiencies were found in the computer program provided to the authors which was used for the analysis of the data. The final number of subjects who participated in the entire study was increased by 59 in the revised analysis. This additional group of students entered the study at the time of the second baseline examination with group assignments being carried out in the same random manner as had been done for the other participants. The original program had designated an upper limit to subject assignment numbers which excluded this group.

The results from the corrected data analysis increased the validity of our earlier conclusions with respect to the similarity of the findings for the three groups, viz. that the children who chewed either sugarless gum or dicalcium phosphate dihydrate gum had essentially the same total caries experience as the no-gum group at the conclusion of the two-year study, thus lending support to previous study demonstrating the non-cariogenic nature of these two types of chewing gum.

Those wishing to obtain copies of the revised data may do so by writing to the undersigned.

*L.W. Hole
Senior Research Officer
Division of Vital Statistics
Department of Health Services
and Hospital Insurance,
Parliament Buildings
Victoria, BC*

Preventive dentistry

We would like to make a few comments regarding plaque control in preventive dentistry.

That control of plaque is important and will save many teeth is unquestionable. That the existing dentist population, in their own offices with their present staff arrangements, can appreciably affect the presence of plaque in the population (even if all dentists were motivated to do so) is questionable.

How does one motivate a dentist who has been practising reparative dentistry for 10 years, in one operatory with one assistant, to equip a "preventive room" and hire a preventive assistant to teach prevention to his patients? Without a full time assistant specializing in prevention a large percentage of the population will still have dental disease. What benefit is it to take the best 10 per cent of our patients and improve their oral hygiene? These patients are already in generally good health and are already motivated to keep their teeth. It is the other 90 per cent who need assistance.

If we can set up denture clinics, why not preventive clinics? Ancillary staff, rather than the dentist, must do the teaching if we wish a significant change in the oral health status of our population.

*A. Tinginys, DDS
J. Stover, DDS
466 King St
London 14, Ont*

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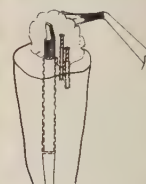
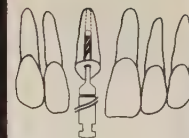
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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

CDA Services and Programs Continued:

Two of the Association's greatest efforts in serving its members are largely taken for granted. One is the *Journal of the Canadian Dental Association*, published each month; the other is the annual CDA National Convention.

Only those who have taken an active part in the production of these major programs can appreciate the time and expertise required to keep them at a high standard of quality. In addition to the many hours spent by volunteer dentists on the related councils and committees, these two activities take up a large portion of staff time.

The Journal

The Association's bilingual monthly Journal attempts to provide interesting and pertinent reading for each segment of the profession — an almost impossible undertaking.

The Journal carries news and scientific articles of provincial, national and international interest. It provides a vehicle through which dentists across Canada can communicate with their colleagues on topics of concern. It includes editorials, special feature articles, book reviews, abstracts, calendars of upcoming events on the national and international scene, Association news, reports on council meetings, additions to the CDA library,

lists of available pamphlets and films, commercial and classified advertising, etc. And, it is the Association's only monthly contact with all its members.

The Journal is, of course, distributed to all members of the Association each month. In addition, copies are sent to many dental and medical libraries throughout the world, as well as to various manufacturing and distributing companies in the dental field. We also have an exchange agreement with well over 200 other dental publications. The Journal circulation list continues to grow and is presently close to 10,000 copies per month.

If the Journal were to be discontinued, the profession would lose the only non-commercial national dental publication in Canada. Members of the Association would no longer have access to a professional publication which attempts to be national in scope in its news coverage and in its scientific and research articles. And the Association would lose its main voice for speaking to its own members as well as to other health workers around the world.

Question 5

Should the Association publish a bilingual dental Journal for its members?

National Conventions

The Association organizes a national convention annually. The site is changed each year, moving the convention back and forth across the country, in an effort to bring the advantages of a national meeting as close as possible to all CDA members, regardless of their place of residence.

Since a national meeting usually tends to attract a larger attendance than a purely provincial one held in the same location, the CDA national convention has a greater potential for drawing eminent clinicians and speakers from within our borders and outside them.

The Association's annual conventions feature all types of scientific programs and provide a forum for exhibitions of the latest in dental equipment

(Continued on page 665)



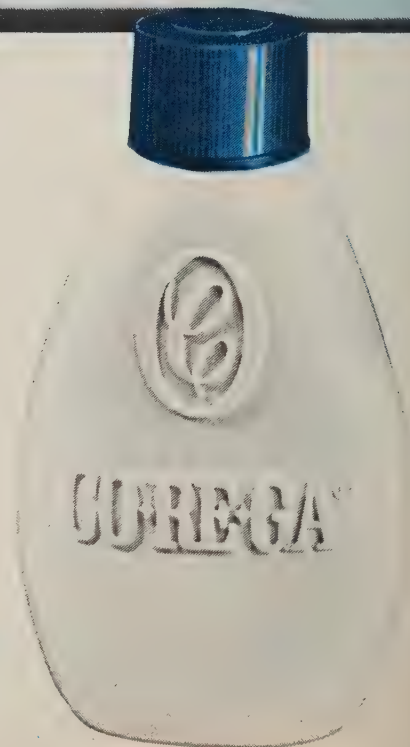
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EDITORIAL

The Canadian Fund for Dental Education

Overheard in the locker room

What has the CFDE ever done for me? Why should I toss in a hundred bucks of my hard earned money? Don't I pay my annual licence fee? Don't I support my dental association? Every time you turn around these days somebody has their hand out!

Why, my gosh, if the CFDE got a hundred bucks from every dentist in Canada (let's see, they would have about 8,000 x \$100) that would be pretty close to a million dollars. And not only that, I hear that a lot of fellows have been sending in even more — some over a thousand dollars. Hey! Imagine, if everyone did that, they'd have eight million bucks in the kitty. Sure wish I had eight million bucks to throw around. I wonder what they intend to do with it anyway.

Well, I hear that they support young graduates, who are trying to get extra education so that they can become teachers in the dental schools. That idea of a workshop conference on dental auxiliaries is badly needed — I hope they have the money to

do that. It is a good idea to get the students together for a conference each year. Of course the CFDE is going to help our National Association. I guess they do a lot of things.

Actually, some of these projects are just the type of thing I'd do myself if I was in charge — and they do ask for suggestions.

Look — what the heck is a hundred bucks to me. After all, it's deductible just like my own expenses. I think I'll just send in my hundred right now — come to think of it, I'll make it two hundred. Golly, I'd like to see the look on their faces down at headquarters if they had to figure out what to do with two million instead of just one. You know, if Charlie and some of these other big operators around town would support their profession the way I always do, we would really show everyone what it means to be a dentist! I think I'll call him up right now and see if he gives as much as I did.

The CFDE is worthy of the support of every dentist in Canada
R.M.G.

Executive Director's Page (continued from page 663)

and products. A variety of social functions round out each annual event.

The national convention attracts general practitioners, specialists, students, auxiliaries and other health care professionals from all across Canada and, increasingly, from other countries as well. In the latter context I remind you that the Fédération Dentaire Internationale has accepted an invitation to hold its 1977 World Dental Congress in Toronto in conjunction with the CDA's annual convention for that year.

The national convention, like other dental conventions, makes a significant contribution to continuing education, a fact recognized not only by the dental profession, but also by the income tax authorities.

If there were no national dental conventions in Canada, one of the most successful means

of bringing dentists from across Canada together and providing them with the opportunity to share scientific and social experiences with fellow practitioners would be lost. There would be other repercussions as well: a major factor in providing continuing education opportunities for Canadian dentists would disappear; a major inducement for Canadian dentists to combine the pursuit of professional learning with the pleasure of travelling across their own country would cease to exist; and the Association's international prestige would suffer and much of the incentive for foreign dentists to visit Canada and share experiences with their Canadian confreres would be lost.

Question 6

What do you think? Is an annual national convention a requisite for the Canadian Dental Association?



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Dentistry in the news

The Association

Blue Cross coverage to include dental accidents

During its recent three-day meeting at CDA headquarters, the Association's Council on Insurance and Investment approved a motion recommending that the present Blue Cross plan be extended to include coverage of dental accidents. It is understood that the rates for this coverage would be 10 cents per month for single coverage and 24 cents per month for family coverage.

CDA and ODA join forces to sponsor booth at CNE

The Canadian and Ontario Dental Associations scored a first for dentistry in Ontario by joining forces to sponsor a booth at the Canadian National Exhibition.

The booth, located in the Better Living Building, was geared to providing the general public with information on many aspects of modern dentistry. Visitors had an opportunity to talk with dentists and to learn about the Ontario Dental Association's proposals for denticare in the province. CDA dental health pamphlets were distributed, along with dental health care products. The booth featured a dental operatory and, although no attempt was made to diagnose individual cases, the exhibit did provide an excellent opportunity to improve public understanding of the benefits of dental health.

CDA financed the booth space for the entire run of the CNE and also paid for the large sign identifying the booth. The ODA Communications Committee, under the direction of Dr. Marvin Klotz, recruited some 60 dentists to assist dental students in staffing the booth. Hal Kershen, a University of Toronto dental student, operating on a \$22,000 Opportunities for Youth Grant, directed the organization and staffing of the exhibit.



The Canadian and Ontario dental associations joined forces to sponsor a booth at this year's Canadian National Exhibition. Theme for the exhibit was "dentistry today".

Canada and the Provinces

Ontario dentists propose denticare program

Ontario's dentists recently submitted a proposal to Health Minister Richard Potter calling for a government-sponsored denticare program. "Our brief calls for immediate denticare for children under six and senior citizens over 65," Dr. R. L. Moran, president of the 3,300 member Ontario Dental Association, said.

The ODA proposal would give everyone in the province basic dental preventive and treatment coverage within 10 years.

The total denticare package would be staged over five phases. Phase one for children under six would cost \$1.54 per month for each of Ontario's 781,000 children in that age bracket.

For those over 65, the cost per person is estimated at \$2.45 monthly for the 650,000 citizens in this age group.

These two phases would be started immediately, the ODA delegation told Dr. Potter.

Coverage for children would include diagnosis and basic treatment to prevent tooth loss and to eliminate pain. For senior citizens, free dentures would be part of the program.

In the third phase of the program, to be implemented within two years, the age limit for children would be raised to 12. The estimated cost per child in this phase is \$2.20 monthly. By 1980, the age limit would be further raised to 18.

Phase four, to go into effect within five years, would provide basic dental coverage to low income groups — the "working poor." Ontario's welfare recipients already receive free dental treatment.

The fifth and final phase of the ODA proposal would be reached by 1983 and would offer dental coverage for every Ontario citizen.

Total estimated cost of the program is \$7,437,000 for children under six and \$19,150,000 for senior citizens. Children's cost would rise to \$37,037,000 per year by 1978 to cover everyone 12 years of age and under, making the total yearly cost at that time \$56,187,000.

Costs are based on projections of the Waterloo County study of three-year olds, with basic treatment estimated at \$37.00 per person per year.

The ODA suggested the government should contribute to the cost of premiums, "permitting the elimination of premiums of low income groups and assistance for premiums paid by others."

Initially, the basic coverage proposed by the ODA would include



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because a severe prolonged hypertension may occur.

PRECAUTIONS: The safety and effectiveness of Carbocaine depend upon proper dosage, correct technique, adequate precautions, and readiness for emergencies.

The lowest dose that results in effective anesthesia should be used to avoid high plasma levels and serious undesirable systemic side effects. Injection of repeated doses of Carbocaine may cause significant increases in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slow metabolic degradation.

Tolerance varies with the status of the patient. Debilitated, elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their age and physical status.

Solutions containing a vasoconstrictor should be used cautiously in the presence of diseases which may adversely affect the patient's cardiovascular system. In persons

with known drug sensitivities or allergies Carbocaine should be used cautiously.

Serious cardiac arrhythmias may occur if preparations containing a vasoconstrictor are employed in patients receiving or following the administration of chloroform, halothane, cyclopropane, trichloroethylene, or other related agents.

ADVERSE REACTIONS: Adverse reactions result from high plasma levels due to excessive dosage, rapid absorption, or inadvertent intravascular injection. Hypersensitivity, idiosyncrasy, or diminished tolerance may also be the cause of reactions. Reactions due to overdosage (high plasma levels) are systemic and involve the central nervous system and the cardiovascular system.

Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may be followed by drowsiness, convulsions, unconsciousness, and possibly respiratory arrest.

the procedure
takes 15 minutes...

why should
the thaw take so
much longer?



Reactions involving the cardiovascular system include depression of the myocardium, hypotension, bradycardia, even cardiac arrest. Treatment of a patient with toxic manifestations consists of maintaining an airway and supporting ventilation using oxygen, and assisted, or controlled respiration as required. Supportive therapy of the cardiovascular system consists of using vasopressors, preferably epinephrine. Convulsions may be controlled by use of oxygen. If convulsions persist, the intravenous administration in small increments of an ultra short-acting barbiturate (i.e., thiopental, thiamylal) may be used. If these are not available, a short-acting barbiturate (secobarbital, thiobarbital) may be used. Intravenous barbiturates should only be used by those familiar with their use. Allergic reactions are characterized by cutaneous signs of delayed onset, or urticaria, edema, and other manifestations of allergy. The detection of sensitivity by skin testing is of doubtful value.

Consider these two facts:

1. Most of today's dental procedures are brief. Patients dislike having their faces numb for hours after they've left the office.

2. The modern local anesthetic solution—Carbocaine 3%—provides unsurpassed anesthesia that allows ample time for routine procedures, an average of 20 minutes *operating* anesthesia in the upper jaw and 40 minutes in the lower, but doesn't linger a great deal longer than necessary.

Carbocaine 3% adds this important dimension to patient comfort because it is fully effective by itself, without any help from a vasoconstrictor.

For longer duration, Carbocaine HCl 2% is combined with Neo-Cobefrin* (brand of levonordefrin) 1:20,000, a vasoconstrictor more stable than epinephrine and less potent in raising blood pressure.

UNIQUE
Carbocaine HCl **3%**
brand of **mepivacaine** HCl
without vasoconstrictor

**The modern local anesthetic
adequately effective by itself**

7161 C

DOSAGE AND ADMINISTRATION: As with all local anesthetics the dose varies and depends upon the area to be anesthetized, vascularity of the tissues, individual tolerance and the technique of anesthesia. The lowest dose needed to provide effective anesthesia should be administered. For specific techniques and procedures refer to standard dental manuals and textbooks.

For infiltration and block injections in the upper or lower jaw the average dose of 1 cartridge will usually suffice. Each cartridge contains 1.8 ml. (36 mg. of 2% or 54 mg. of 3%). This dose may be doubled if necessary to effect anesthesia. The maximum dose should not exceed 3.6 mg. per pound of body weight.

Any unused portion of a cartridge should be discarded.
HOW SUPPLIED: Carbocaine (brand of mepivacaine) HCl 3% without vasoconstrictor—each ml. contains: Carbocaine HCl, 30.0 mg.; sodium chloride 3.0 mg.; and water for injection. Methylparaben 1.0 mg. is added to the

solution and pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Carbocaine HCl 2% with Neo-Cobefrin (brand of levonordefrin) 1:20,000—each ml. contains: Carbocaine HCl 20.0 mg.; Neo-Cobefrin, 0.05 mg.; sodium chloride 4.0 mg.; acetone sodium bisulfite, not more than 2.0 mg.; and water for injection. Methylparaben 1.0 mg. and sodium lactate 1.0 mg. are added to the solution and the pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Both formulas are available in 1.8 ml. cartridges, cans of 50, to fit the Carpule* Aspirator, and in 50 ml. multiple dose vials.

Sterling Drug Ltd. is the registered user of the trademarks Carbocaine and Neo-Cobefrin (Trade Mark Reg.)

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Aurora, Ontario

[®]Our only detail man is this coupon!

We won't take up your valuable office time, but we would like to send you a supply of Anacin with Codeine for your clinical evaluation.

Please fill in and mail this coupon today.

Please mail me one dispenser containing 12/12 tablet tins of Anacin with Codeine.

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Office Address _____

City _____ Province _____

Dentist's Signature _____

Date _____

C.J. 10/1/73

Narcotic Regulations require Dentist's signature in full and date of request.

Send to: Whitehall Laboratories Limited,
Mississauga, Ontario.

Each Anacin with Codeine tablet contains:

Acetylsalicylic Acid	340 mg.
Acetaminophen	49 mg.
Anhydrous Caffeine	15 mg.
Codeine Phosphate	8 mg.

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ANACIN
WITH
CODEINE

examination and x-rays, fillings, extractions, space maintainers, prophylaxis and topical fluoride applications, as well as dentures for senior citizens.

The ODA brief said that in Ontario the main manpower need is for more hygienists, assistants and denture therapists.

"The time is long past when a short-sighted and self-defeating reluctance to invest adequately in dental health will continue to satisfy the demands of Ontario for the degree of dental health which the dental profession is capable of delivering," the brief said.

It also called for a massive government-dentist public education program to sell the public on prevention of dental disease, and universal fluoridation of water to reduce the rate of tooth decay.

Dental assistants call for more trained auxiliaries

The Newfoundland Dental Assistants' Association has gone on record as opposing the legalization of denturists.

The Association told the provincial House of Assembly's select committee investigating denturists that the demand for denture service is becoming smaller all the time and can be managed in existing dental offices. The Assistants further stated that the licensing of denturists would in no way help the dental situation in Newfoundland.

The brief recognized that there is an acute shortage of dental manpower in the province, but only in the fields of restorative and preventive dentistry. It called for the use of more auxiliary dental staff and stated that such auxiliary personnel "trained and licensed to work within the dental team under the supervision of a dentist is the best way to maintain the highest standards at the lowest possible cost."

The dental assistants also said that, while the first need is for more dentists, increased numbers of auxiliaries are also required to take over duties which are repetitive and do not require the knowledge and skill of the dentists. Their brief urged that immediate steps be taken to establish a school for the training of dental assistants at the College of Trades and Technology.

CDA tape cassette series worth points in Alberta

During its June 1973 meeting, the Board of Directors of the Alberta Dental Association approved a motion calling for acceptance of the CDA tape cassette series on continuing education, offered through Medifacts Ltd., as a method whereby a dentist may obtain continuing education points. The number of points is yet to be determined by the association's board of directors.

The CDA tape cassette series is also worth continuing education points for dentists in Manitoba and Nova Scotia.

Dr. Low new president of Alberta Association

Dr. B.A. Low of Edmonton is the new president of the Alberta Dental Association. He succeeds Dr. R.G. Dickson of Drumheller, Alberta.

Dr. Low is a graduate of the University of Alberta's Faculty of Dentistry.

Regina City Council gives support to dental care program

City Council recently voted to accept provincial government recommendations for implementation of a dental care program for children in Regina.

The program is designed to cover all six year olds when it begins in 1974, expanding to cover five, six and seven year olds in 1975, and reaching the ultimate goal of including children in the eight to 12 year age range during 1976 to 1978.

Originally the city and the province thought it best to discontinue Regina's dental division services. However, the committee which met with officials of the provincial government was concerned that the province's program would not be fully implemented until 1978 and that some age groups would not be covered by it.

City manager Bruce Smith, in his report to council, recommended that council concur in the provincial plan to assume total responsibility for the eligible children who enrol in the plan,

but that the city retain its dental division to support and complement the province's program. The continued operation of the city dental division would ensure that there is no overlapping of services.

Nova Scotia dentists elect new president

Dr. D. Alan Stewart of Windsor, Nova Scotia, was recently elected president of the Nova Scotia Dental Association.

Dr. Stewart, a 1954 graduate of the Faculty of Dentistry at Dalhousie University, succeeds Dr. Douglas Eisner of Halifax.

Dr. Tanner retires

The Honourable Daniel J. MacDonald, Minister of Veterans Affairs, has announced the retirement of Dr. Douglas McGill Tanner, Department of Veterans Affairs. Dr. Tanner's retirement, effective August 14, 1973, ends a career of more than 23 years with DVA, the last 10 as Director of Dental Services.

Dr. Tanner is a graduate of the University of Toronto Schools and received his DDS degree from the University of Toronto, Faculty of Dentistry. During the war he served with the Royal Canadian Dental Corps in Great Britain, North Africa and Italy, retiring with the rank of major. He served four years with No. 15 General Hospital and was made a Member of the Order of the British Empire for this service.

Dr. F. Arthur Irwin, 52, formerly Chief of Service, Dentistry, Ottawa District, succeeds him as Departmental Dental Services Adviser to the Director General. Dr. Irwin served with the Royal Canadian Air Force from 1942 to 1946 as a radar technician in Great Britain, the Middle East, India and Burma. After his discharge he attended the University of Toronto, Faculty of Dentistry and received his degree through the university training plan provided by the Department of Veterans Affairs.

Dr. Tanner will continue to serve as dental adviser to the Canadian Pension Commission.

Assistance offered to Canadian professors in foreign universities

The Association of Universities and Colleges of Canada has announced that the Department of External Affairs now has a program of travel assistance to Canadian university professors who have been invited to teach in foreign

universities. Grants will be awarded to Canadian citizens and their families on the basis of a competition. All applications will be examined by a selection committee.

Those interested may obtain a brochure and application from the Cultural Affairs Division, Department of External Affairs, Ottawa, Ont. K1A 0G2.

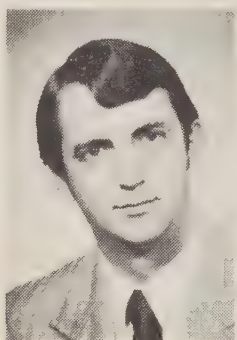
Alpha Omega establishes Continuing Education Library

The Alpha Omega Fraternity has established a Continuing Education Library. This project has been aided and partially funded by a Canadian government grant, under the New Horizons Program. It is designed to involve senior members of the dental profession. Starting with a small nucleus of such members, it is hoped that the numbers will be augmented over the years by dentists reaching retirement.

The library, located in pleasant quarters at 2016 Bathurst Street, is available to the dental profession of Toronto. It has initially been planned as a reading and reference library, with expectations of expanding into a lending library later on.



septodont leaders in dental medicine



Mr. John L. Curr

Mr. John Curr has been appointed Canadian Head of Sales for Spécialités SEPTODONT Laboratoires.

Mr. Curr brings to his new position extensive knowledge and expertise accumulated in Canada, England and Europe and will be responsible for marketing products in all areas of dental medicine to the profession in Canada.

With headquarters based in Paris France, SEPTODONT is the only company in the world developing and manufacturing pharmaceutical products exclusively for the dental profession.

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Endodontics

Pedodontics

Periodontics

Haemostatics

**Preventative
Dentistry**

**Post-Operative
Treatment**

International Items

New record for ADA membership

Membership in the American Dental Association climbed to a new record high of 117,159 as of June 1. This figure compares to a total of 117,083 on December 31, 1972. A breakdown shows: active and life members, 100,661; associate members, 67; honorary members, 117, and student members, 15,691.

Periodontologists to meet in San Antonio

The 59th annual meeting of the American Academy of Periodontology will be held at the Convention Center in San Antonio, Texas, October 24 - 27, 1973.

The four day program will feature scientific sessions dealing with management of pain and anxiety in the periodontal patient, and with occlusal adjustment by selective grinding. In addition, the meeting will include presentation of original research and clinical papers by graduate and post-graduate students, and a comprehensive program of projected clinics.



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Caution urged in use of acupuncture

The American Dental Association has called for concentrated research effort on the use of acupuncture in dentistry, but at the same time cautions dentists against the premature and indiscriminate use of this experimental technique pending further scientific evaluation of its effectiveness and safety.

The ADA Council on Dental Research states that: "the indications and contraindications for its use have not been adequately defined, nor have the hazards or the inherent risks to the patient been evaluated. Additionally, the physiological and psychological aspects of the phenomenon, as determined by scientifically controlled studies, have yet to be elucidated."

However, because the Council recognizes the potential benefits of acupuncture, it recommends "support for scientifically designed and controlled investigations of high quality" as soon as possible.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on August 31, 1973:

Guaranteed Fund \$10.361;

Fixed Income Fund \$13.751;

Common Stock Fund \$30.058.

Total assets (market value) of the plan were \$15,981,244.38.

The following portfolio purchases and sales occurred during the preceding month: bought \$1,300,000 Aluminum Company of Canada note. Sold \$1,300,000 Aluminum Company of Canada note.

For further information write to CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.

Deaths

Beattie, William Balmer. 71. Ottawa. Royal College of Dental Surgeons of Ontario, 1924. 23-8-73. Survived by Edna (wife); Jane and Deborah (daughters).

Jasmin, Alfred. 72. St. Laurent, Que. University of Montreal, 1927. 12-7-73.

Ledlow, John Douglas. 51. Orillia, Ont. University of Toronto, 1950. 23-8-73. Survived by Patricia (wife); John, Roger, Michael and Vernon (sons); and Janice (daughter).

Marchand, Guy-René. 42. Montreal, University of Montreal, 1957. 26-7-73.

Parr, Leo R. Toronto. Royal College of Dental Surgeons of Ontario, 1918. 19-8-73. Survived by Dorothy (wife); Mrs. Leola Cote and Mrs. Margaret Walsh (daughters).

Personal touch?

Ever wonder what happens if your mail order is "short shipped", "fouled up" or "still in transit" just when you need it most. Who do you speak to if your package arrives in crumpled condition... and how quickly can the damaged products be replaced?

You know it, Doctor. It makes a lot of sense to deal face-to-face with people who know their business... and yours. People like Denco... with a well trained staff of dental supply specialists and a full line of readily available products and equipment. The kind you can count on to get you what you need, when you need it.

Beats the "old post office bounce"... and may even save you a few headaches in the long run.



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For your patients... a complete line of products for daily plaque control.

Think how much easier your life would be if your patients would practice proper dental care at home. You can encourage them to do this with the Tek Action line of dental products.

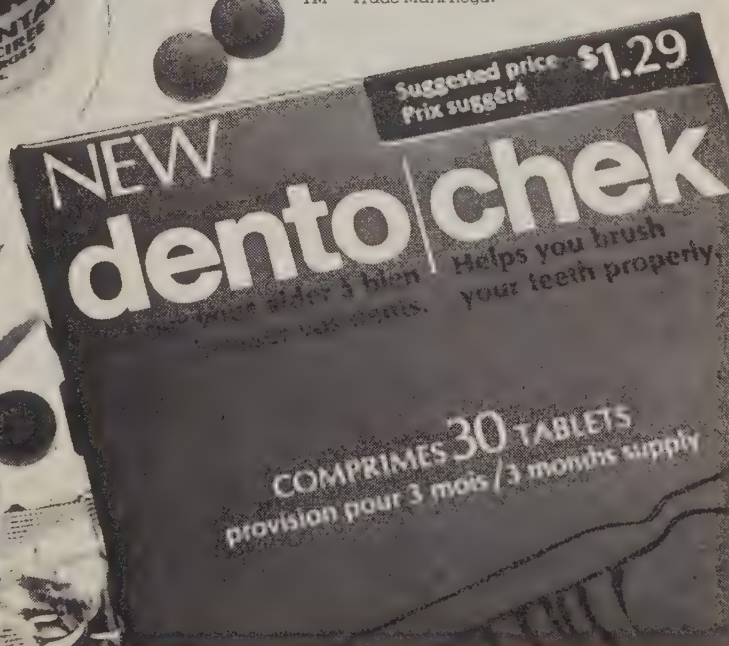
Tek™ Action Brushes: all with polished bristle. • **Delicate Action™** The softest brush. Multi-tufted, flat trim. .007 nylon. • **Gentle Action™** A little firmer. .008 nylon. • **Multi Action™** Serrated trim for better cleaning action. .009 nylon • **Brislon Action™** Combination of natural bristle and nylon; serrated trim. • **Natural Bristle:** Preferred by some. • **Junior:** For ages 5-12. **Stimulators:** Surgical rubber stimulator on easy to use plastic handle. **STIM-U-DENT:*** Interdental Stimulators: For cleaning and stimulation in the inter-proximal areas. **Tek Dental Floss™** Unwaxed so floss spreads for better cleaning and plaque removal. **Dento/chek™** Disclosing Tablets Turns plaque red indicating where more thorough cleaning is necessary.

We would be pleased to send you a complimentary set of Tek Action oral health products for your examination if you request them on your professional letterhead or enclose your professional card. We think you'll agree it makes good sense to recommend these products to your patients.

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**Help your patients combat plaque.
Recommend Tek Action products.**

*Trade Mark of Stim-U-Dent, Inc., Detroit, Mich.
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CAUSTINERF PREDOSED PELLETS

PAINLESS Ensures completely painless devitalisation and mummification of the deciduous pulp.

RELIABLE May be left permanently in cavity with no interference with normal exfoliation.

SAFE Is arsenic-free and has unlimited shelf life.

SIMPLE Is easy to use from plastic dispenser containing 10 predosed treatment pellets.

SUCCESSFUL Prevents any after pain and ensures success of treatment.



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DENTAL DIVISION

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ETOBICOKE, ONTARIO

Please supply:

- ☐ 100 Caustinerf predosed treatment pellets at \$15.00
- ☐ 1 Intro-Pack Caustinerf predosed treatment pellets (2x100 pellets plus 1 partial trial box of pellets) at \$30.00

Name

Address

.....

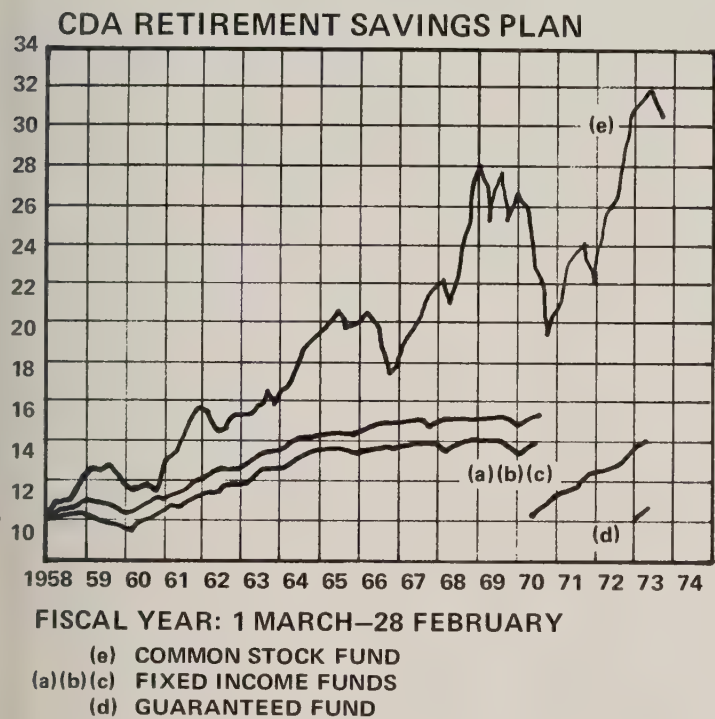
.....

Dealer

YOUR SECURITY

The two previous articles have dealt with the first four tips for building an estate with retirement in mind. The fifth tip will be discussed here.

5. Make use of hindsight to plan your future – The following chart will show you how the CDA Retirement Savings Plans have performed in the past. Since this graph is probably not too different from the performance of other funds, or for that matter the stock market averages, something can be learned as to how to use your money for best advantage



The following observations can be made:

(1) It is obvious that on a long-term basis the common stock fund outperforms the fixed incomes funds.

(2) It is obvious that the corporate bond fund (a) and the government bond fund (b) were running so close together that there was no need for both.

(3) When the bond funds were combined and became the fixed income fund (c) on May 1970 it was coincident with higher interest rates.

(4) Even though the swings in the bond market are smaller than the swings in the common stock market 1958 – 1960 will show that you do not necessarily protect your principal during a short period with government bonds.

(5) Observing the common stock fund within periods of 10 years you will always be ahead. Periods of five years are not so certain; 1963-68 was a very good period but 1965-70 not so good.

Shorter periods such as from 1970-73 can be spectacular, or as from 1969-70 disastrous. (However, drops in the market never last long and history has proved that the long term trend is always up. Even the great market crash of 1929 only lasted three years.)

Using the above observations, you should be better able to understand how to plan your investment in the CDA Retirement Savings Plan.

(1) If you are investing for more than five years and particularly 10 years and more, you should be in common stocks only. Anyone who has been splitting their funds 1/3 each with the two fixed funds and the common stock fund has just been diluting their growth by 2/3.

(2) If you have only five years left to invest, any new funds should go to fixed income, and if you consider the market high at the time switch common stock to fixed income.

(3) If you have less than three years or are considering retiring in a year or two it probably would be wise to switch into the guaranteed fund because this definitely will not go lower than the amount you paid for it.

One might think by looking at the chart that it would be easy to buy common stock when the market is low and switch to fixed income when the market is high. However, even the money managers are reluctant to make a decision on when to switch. The secret of long-term investing is *dollar cost averaging*. This means that if you pay a fixed amount of dollars over evenly distributed time periods you will end up with a cost that is less than the average price. Research has shown that it does not matter whether you invest monthly, quarterly or yearly the effect is the same as long as you pay the same amount of dollars every time.

e.g. 1970 you buy \$3000 worth at \$20 a unit = \$150 units
1971 you buy \$3000 worth at \$25 a unit = \$120 units
1972 you buy \$3000 worth at \$30 a unit = \$100 units
Total spent \$9000 \$370

Average \$24.32 a unit

Registered retirement savings plans are ideal vehicles for investing in this manner.

The last three articles should give you a better idea of how to use your CDA Retirement Savings Plan to build a retirement fund. This should go hand in hand with an insurance program.

We are planning to present two articles explaining our life insurance philosophy.

These articles are supplied to the Journal by Dr. O.F. Wright of Vancouver. Dr. Wright is publicity chairman for the Canadian Dental Association's Council on Insurance and Investment.

USE WITH CONFIDENCE... NEW RITTER X-RAY SYSTEMS

We've added still further advancements to a *field-proven* line of radiographic equipment.

We've incorporated *all* the latest safety features. New Ritter X-ray Systems are in *full compliance* with the Canadian Radiation Emitting Devices Act.

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The new Ritter Explorer II System offers you the opportunity for diagnostic quality possible only with *full range* radiography. This modern high kv x-ray equipment reduces patient exposure, gives utmost safety. Select any value between 65-90kv. Choose exact amount of radiographic contrast required for your individual technic. No need to pre-determine your future needs—add any number of automatically-controlled remote tubeheads *when you need them*. Eliminating travel between Master Control and remote tubeheads saves time and effort, permits greater office efficiency and output.



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See these exciting *new* X-rays in the Ritter booth at the Canadian Dental Association Convention.

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For Emergency Relief



for "on site" relief of dental pain until chairside treatment
is possible

When a patient calls with emergency pain and it's impossible to give immediate chairside treatment, recommend Poloris for safe, fast relief. A Poloris poultice provides the "holding relief" the patient needs. As opposed to systemic analgesics the local action of Poloris avoids the risk of side effects; has no known contraindications.

HOW IT WORKS

By producing local counterirritation, Poloris stimulates gingival nerve endings and elicits vasomotor response in neighboring and deeper structures. The increased capillary activity and improved blood circulation help to diminish congestion and thus, to relieve pain.

Recommend Poloris for relief of pain and swelling caused by:

- abscess • extraction • periocoronitis • pericementitis • pulpitis
- instrumentation • dental emergencies

Many dentists use Poloris adjunctively, pre- and postoperatively, to speed "pointing" of abscess, reduce swelling, ease pain.

Ingredients in Poloris:

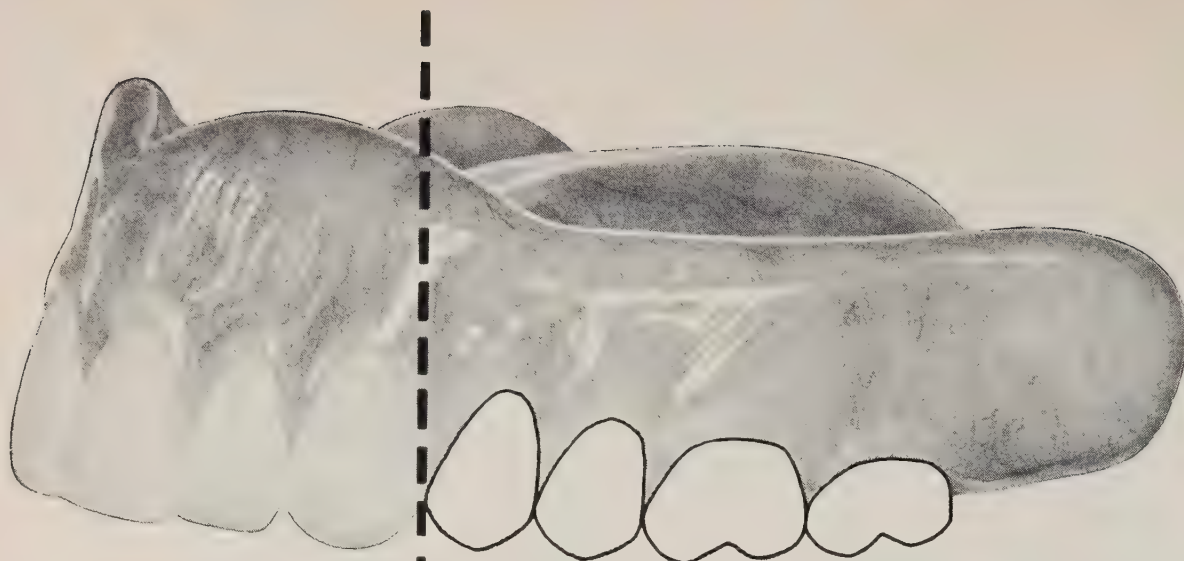
- Benzocaine—topical anesthetic and analgesic.
- Hops—sedative acting on nerve endings.
- Capsicum—counterirritant and circulation stimulant.
- Hydroxyquinoline Sulfate—antiseptic and bacteriostatic.

Poloris is available at drugstores . . . it is the ideal temporary relief for dental pain and swelling. Patients appreciate the quick, direct comfort of Poloris poultice . . . its ease of use.

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Pourquoi donner au patient avec une prothèse un sourire à moitié naturel? Pourquoi ne pas lui donner ce qu'il y a de mieux du point de vue matériau et dessin anatomique?

Pour cela, il est nécessaire d'avoir les couleurs des postérieures qui vont avec les couleurs des incisives Trubyte que vous avez choisies avec soin. Et seulement les postérieures Trubyte sont disponibles dans les formes occlusales que vous préférez, en porcelaine et en plastique.

Assurez-vous de toujours recevoir des postérieures Trubyte—et seulement Trubyte. Une prescription complète comprend le nom et la couleur soit en Bioform, soit en Biotone. Votre technicien appréciera vos instructions précises.



Verifiez le lingual
des antérieures pour
le (—) croissant Trubyte.

**Lorsque vous payez pour ce qu'il y a de mieux,
assurez-vous de recevoir ce qu'il y a de mieux.**

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Le Canada

Selon une étude effectuée, à Montréal, par cinq spécialistes; l'instauration de l'assurance-maladie n'a pas affecté la qualité des soins tout en diminuant le nombre d'heures de travail des médecins

La mise en vigueur du régime d'assurance-maladie, en novembre 1970, ne semble pas avoir affecté la qualité des soins dispensés aux montréalais, tout en amenant une diminution marquée du nombre d'heures de travail des médecins de la Métropole.

Telles sont du moins les conclusions d'une étude effectuée par cinq spécialistes auprès d'un certain nombre de médecins montréalais, avant et après l'entrée en vigueur du régime d'assurance-maladie au Québec. Cette recherche a été réalisée grâce à une subvention d'un organisme américain, le National Center for Health Services Research and Development. Les résultats sont publiés dans le numéro de mai 1973 de "The New England Journal of Medicine", sous le titre: "Effects of "free" medical care on medical practice — the Quebec experience".

La pratique médicale

Selon cette étude, la durée moyenne de la semaine de travail des médecins de la Métropole a été réduite de huit heures et demie à la suite de la mise en vigueur de l'assurance-maladie, passant de 54.8 heures à 46.3 heures. Entre les deux périodes de sondage, soit de octobre 1969 à mai 1970, et de octobre 1971 à mai 1972, le nombre de

médecins pratiquants augmentait à peine, passant de 2424 à 2441. On note une diminution considérable du temps consacré aux consultations par téléphone ainsi qu'aux visites des patients à l'hôpital et à domicile. Si l'on excepte les consultations par téléphone, le nombre moyen de contacts quotidiens entre patients et médecins a connu une hausse, soit de 56,613 à 59,352. Le nombre de personnes reçues quotidiennement en consultation dans les cabinets privés a augmenté de 23,840 à 31,509. Par ailleurs, le pourcentage de personnes qui, de l'avis des médecins, ont demandé une consultation médicale sans raison a légèrement augmenté, passant de 1.1% à 1.9%.

La qualité des soins

Selon les auteurs, les données recueillies lors du sondage ne permettent de conclure ni à une hausse, ni à une baisse de la qualité des soins depuis l'instauration de l'assurance-maladie. L'analyse des réponses des médecins à ce sujet révèle que, selon eux, l'assurance-maladie a eu des effets positifs surtout en ce qu'elle a facilité l'accessibilité aux soins en enlevant la barrière monétaire, et qu'elle a eu des effets négatifs surtout en ce qu'elle a accru la pression exercée par les patients sur les médecins.

Tel que prévu, le pourcentage des patients qui, en raison de leur état, auraient dû consulter un médecin plus tôt, a baissé légèrement, passant de 2.6% à 1.8%.

D'un autre côté, selon les auteurs, le seul point négatif révélé par le sondage pourrait être le fait qu'à la suite de la mise en vigueur de l'assurance-maladie, les médecins n'ont pu consacrer autant de temps qu'auparavant à chaque patient.

Projet de perfectionnement des cadres supérieurs des établissements de santé et de services sociaux

Le ministère des Affaires sociales accordera une subvention de \$131,050 à l'Ecole nationale d'Administration publique (ENAP) en vue d'un projet de perfectionnement des cadres supérieurs des établissements de santé et de services sociaux. C'est ce qu'a annoncé le ministre des Affaires sociales, monsieur Claude Castonguay.

Le projet de perfectionnement s'adressera, dans l'immédiat aux directeurs généraux des centres hospitaliers, des centres d'accueil et des centres de services sociaux. Il s'inscrit, toutefois, dans un contexte d'action continue et plus étendue en matière de perfectionnement, puisque le ministère considère les cadres des établissements comme des partenaires dans la réforme des services de santé et des services sociaux.

C'est ainsi qu'à moyen terme, ce projet, préparé, à l'intention des directeurs généraux, permettra de mettre au point des programmes adéquats pour les directeurs des divers services et éventuellement pour des groupes de cadres intermédiaires.

Le programme d'enseignement prévu, dans l'immédiat, pour les directeurs généraux, vise les objectifs suivants: une compréhension du rôle dynamique de l'établissement en fonction de son environnement social et technologique; une compréhension des possibilités d'améliorer la gestion par l'introduction de nouvelles méthodes d'administration. Le programme sera divisé en deux sessions de cours tenues à un intervalle de deux à trois mois; chaque session s'étalera sur une période de deux à trois semaines et sera suivie d'une période d'évaluation et de validation de l'expérience.

C'est à l'ENAP qu'il appartiendra de préparer, d'administrer, de dispenser et d'évaluer le programme. D'autre part, le ministère mettra sur pied un comité aviseur chargé de le conseiller sur l'orientation à donner aux programmes de perfectionnement et sur l'analyse des résultats obtenus. Ce comité sera éventuellement formé de représentants du ministère, de l'ENAP et des établissements.

Le ministère des Affaires sociales communiquera sous peu avec les directeurs généraux des établissements de santé et de services sociaux pour les inviter à participer au programme de perfectionnement.

Les dentistes de l'Ontario réclament l'assurance dentaire pour les personnes âgées

L'Association dentaire de l'Ontario demande que les soins dentaires soient inclus dans le régime d'Assurance-maladie de l'Ontario. Le Bureau des gouverneurs de l'Association a exprimé l'opinion, au cours de l'assemblée annuelle à Toronto, le 13 mai dernier, que les personnes âgées devraient bénéficier des mêmes droits prioritaires accordés aux enfants en vertu des soins assurés.

Plus tôt cette année, le docteur Irwin Lightman, président du comité de dentisterie gérontologique de l'ADO, affirmait que le Toronto métropolitain comptait environ 200,000 personnes de 65 ans et plus dont le tiers seulement recevait des soins dentaires appropriés. Le nombre de pensionnés s'élève à environ 650,000 en Ontario.

Nouvelles internationales

Les canadiens participent à la conférence sur l'administration de l'ADA.

La 24e conférence annuelle sur l'administration de l'Association dentaire américaine s'est tenue à Chicago, du 4 au 6 juin dernier. Au-delà de 150 secrétaires et de membres des Comités

exécutifs de diverses associations dentaires de plusieurs états assistèrent à cette session de trois jours en compagnie du docteur Gordon Watson, directeur du Comité exécutif de l'ADA et du personnel des cadres de l'Association. La dentisterie canadienne y était représentée par six de ses membres: le docteur William G. McIntosh, directeur du Comité exécutif de l'Association dentaire canadienne; M. Ken L. Croft, directeur administratif du Collège des chirurgiens dentistes de la Colombie-Britannique; le docteur Charles E. Gosselin et le docteur Marcel B. Archambault, respectivement président et secrétaire-archiviste du Collège des chirurgiens dentistes de la province de Québec; M. Ian Cato, directeur du Comité exécutif de l'Association dentaire de l'Ontario; et le docteur Kenneth F. Pownall, secrétaire-archiviste et secrétaire-trésorier du Collège royal des chirurgiens dentistes de l'Ontario.

Le Congrès de la FDI en 1974 sous le patronage de la reine Elizabeth

Le Comité d'organisation du Congrès de la Fédération dentaire internationale a révélé que le congrès sera placé sous le haut patronage de la reine Elizabeth. Une lettre en provenance du Garde de la cassette de la souveraine déclare: "Sa Majesté s'est montrée gracieusement heureuse d'accorder son patronage au 62e Congrès dentaire mondial qui aura lieu à Londres, du 8 au 14 septembre 1974."

Le Congrès, dont l'hôte sera l'Association dentaire britannique se tiendra au Royal Festival Hall et les environs. Le thème principal du programme portera sur "Le rôle du dentiste dans une société en évolution" et touchera particulièrement aux aspects sociologiques et économiques des soins dentaires.

Recherche

Différences faciale chez les parents d'enfants souffrant de becs-de-lièvre et de fissure palatine

D'après un article récent du *Cleft Palate Journal*, lorsque le bec-de-lièvre et la

fissure palatine surviennent chez un enfant sans qu'il y ait d'antécédent de la même anomalie dans la famille, les observations démontrent que les deux parents ont tendance à présenter un nez plus court, des mâchoires inférieures plus basses et la partie supérieure du visage moins convexe.

Les chercheurs qui ont publié cet article ont étudié deux groupes de parents dont l'un avait des enfants affligés de becs-de-lièvre et de fissures palatines; l'autre groupe comprenait des parents dont les enfants ne souffraient pas de ces lésions. Chaque groupe était composé de 20 parents.

Les chercheurs ont compilé, d'après des radiographies, les mensurations des distances entre certains os et la longueur de certains autres des sujets des deux groupes. Après avoir comparé les sujets ainsi que les mensurations recueillies chez les pères et les mères des deux groupes, ils ont pu établir certaines différences consistantes et statistiquement probantes entre les deux groupes de parents. Les résultats ne s'appliquent pas aux becs-de-lièvre sans fissure palatine que les chercheurs considèrent comme un autre genre de lésion.

Les causes du bec-de-lièvre ne sont pas encore clairement définies, surtout sans les nombreux cas où cette lésion survient spontanément dans une famille où elle n'a pas de précédent connu.

Présence de virus dans la carie dentaire

Des scientifiques en recherche dentaire à Miami, Floride, ont révélé que toutes les bactéries qui provoquent la carie et qui ont fait l'objet de leurs observations jusqu'ici sont infectées par un provirus. (Un provirus est constitué par la partie d'acide nucléique d'un virus dénuée d'enveloppe protéique et susceptible de reproduction.) Par ailleurs les souches microbiennes ne contenant pas de provirus ne provoquent pas la carie.

Ils exposèrent huit souches de streptocoque mutans et une de streptocoque salivarius aux rayons ultraviolets ainsi qu'à l'action de divers agents dont la mitomycine et la nitrosoguanidine. Ces traitements eurent pour effet de lyser les parois des cellules bactériennes après

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avoir déclenché la formation et la libération subséquente de ce qui apparaît au microscope électronique comme des virus à tête hexagonale munis de longs flagelles contractiles.

Les chercheurs constatèrent que certaines bactéries présentant un tel comportement existaient dans les dents humaines cariées et ces dernières produisirent la carie des dents animales.

Plusieurs autres souches, non cariogènes mais apparentées sérologiquement aux souches productrices de virus soumises à l'irradiation et aux mêmes traitements, ne manifestèrent aucun signe de lyse et ne libérèrent aucune particule virale.

Les chercheurs n'ont pas encore démontré que les virus libérés sont susceptibles d'accepter d'autres bactéries, pas plus qu'il n'a été prouvé que ces bactéries particulières peuvent être rendues inoffensives et ne plus entraîner la carie. Toutefois, il est reconnu que la diphtérie et la fièvre scarlatine sont causées par des toxines produites par des bactéries infectées de virus et qui une fois traitées deviennent inoffensives pour les humains puisqu'elles ne produisent plus de toxines.

Conséquemment les scientifiques poursuivent leurs recherches sur ces streptocoques afin d'établir avec certitude que l'infection virale constitue un facteur essentiel de leur capacité de causer la carie.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 août 1973:

Fonds avec garantie \$10.361;

Fonds à revenu fixe \$13.751;

Fonds d'actions ordinaires \$30.058.

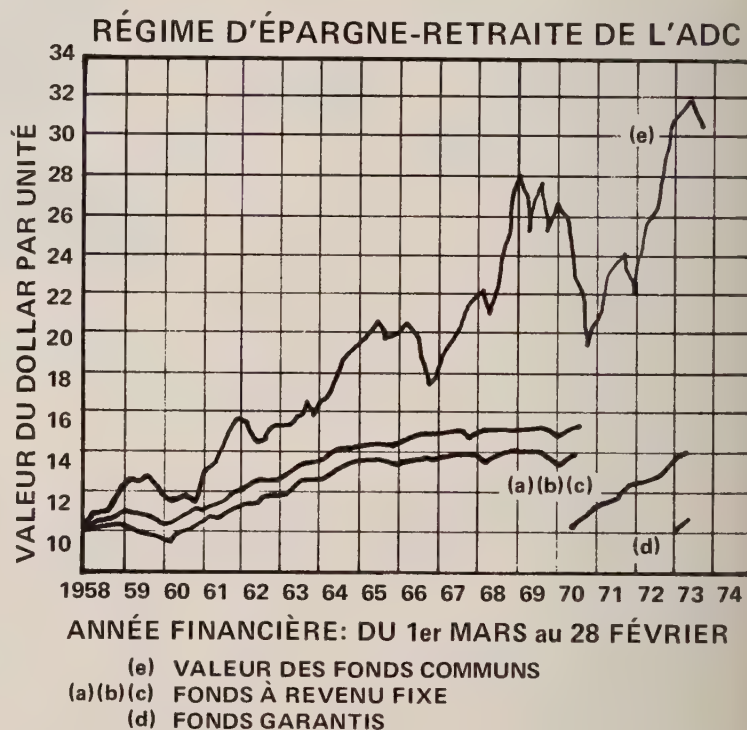
L'avoir total (valeur marchande) du régime se montait à \$15,981,244.38.

Au cours du mois précédent, les transactions ont été les suivantes: achat \$1,300,000 Aluminum Company of Canada note. Vente \$1,300,000 Aluminum Company of Canada note.

VOTRE SÉCURITÉ

Les deux articles précédents vous ont entretenus des quatre premiers conseils permettant de vous constituer un fonds de retraite. Nous vous en présentons un cinquième.

5. Assurez efficacement votre avenir, en réglant votre visée en fonction du tir à longue portée. Le tableau suivant démontre les résultats obtenus dans le passé par le régime d'épargne-retraite de l'ADC. Considérant que le tracé suivant ne diffère pas sensiblement de ceux d'autres régimes, ou de la moyenne du marché des valeurs, il est possible d'en tirer des données susceptibles d'établir les moyens les plus profitables d'investir votre argent.



Ce tableau permet les observations suivantes:

(1) Il ne fait aucun doute que les résultats atteints par les valeurs du fonds commun dépassent, à long terme, celles des fonds à revenu fixe.

(2) Il est aussi évident que le niveau des obligations des sociétés (a) et celui du fonds des obligations du gouvernement (b) sont rapprochés l'un de

l'autre, au point de rendre l'existence des deux inutile.

(3) Quand les fonds d'obligations ont été fondus en mai 1970 pour former un fonds à revenu fixe (c), les intérêts ont été plus élevés.

(4) Bien que les fluctuations du marché des obligations soient moins élevées que celles du marché des valeurs ordinaires pour la période de 1958-1960, les tracés démontrent, en ce qui concerne les obligations du gouvernement, que votre capital n'est pas nécessairement protégé à court terme.

(5) L'observation du comportement des valeurs ordinaires, sur une période de 10 années, vous permettra de prévoir les résultats éventuels. Les observations portant sur une période de 5 années ne sont pas assez sûres. Ainsi, la période de 1963-68 présente des résultats excellents, alors que ceux de 1965-70 furent moins bons. Des périodes plus courtes, comme celle de 1970-73, peuvent apparaître spectaculaires. En revanche, d'autres périodes comme celle de 1969-70 furent désastreuses. Toutefois, le fléchissement du marché des valeurs ne dure pas. A long terme, l'histoire prouve que la tendance du marché est toujours à la hausse. Même l'effondrement du marché, en 1929, n'a duré que trois ans. Les observations précédentes devraient vous apporter une meilleure compréhension de la planification de vos placements dans le régime d'assurance-retraite de l'ADC.

(1) Quand vous désirez effectuer un investissement pour plus de 5 ans, particulièrement pour 10 ans et plus, il faut choisir uniquement les valeurs de fonds communs. Ceux qui partagent leurs fonds en trois parties: les deux tiers dans les fonds à revenu fixe et le tiers dans les valeurs de fonds communs, ne font qu'atténuer la croissance de leur capital dans une proportion des deux tiers.

(2) Quand vous ne disposez que de 5 ans pour investir dans de nouveaux fonds, vous devez investir dans les fonds à revenu fixe. Toutefois, si vous considérez que le marché des valeurs est élevé, échangez alors vos fonds communs pour des fonds à revenu fixe.

(3) Quand vous disposez de moins de trois ans et que vous considérez prendre votre retraite dans un an ou deux, il serait sage de choisir le fonds garanti, puisque ce dernier ne pourra s'infléchir au delà du montant que vous l'avez payé.

En observant le tableau, vous pourrez conclure qu'il suffit simplement d'acheter des valeurs communes quand le marché est à la baisse et de transférer ses investissements dans des fonds à revenu fixe quand le marché est à la hausse. Notez toutefois que même les directeurs financiers répugnent à prendre la responsabilité de choisir le moment de procéder à cet échange. La moyenne du *coût par dollar* constitue le secret de l'investissement à long terme. C'est-à-dire que si vous versez un montant fixe de dollars pour des périodes réparties uniformément, il en résultera un coût inférieur du prix moyen. Les recherches ont démontré que le fait d'investir tous les mois, quatre fois par année ou chaque année n'importe pas. En fait, le résultat sera le même, à condition que vous versiez le même nombre de dollars à chaque versement.

e.g. VOUS ACHETEZ UNE VALEUR DE

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En 1971	\$3000 en unités de \$25.	= \$120 unité
En 1972	<u>\$3000</u> en unités de \$30.	= <u>\$100</u> unité

Dépense totale	\$9000	\$370
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Moyenne: \$24.32 par unité

Le choix des régimes d'épargne-retraite enregistrés constituent le moyen idéal d'investir de cette manière.

Les trois derniers articles vous donneront une meilleure idée de l'utilisation du régime enregistré d'épargne-retraite offert par l'ADC, afin de vous constituer un fonds de retraite. Ce projet doit se réaliser conjointement avec un programme d'assurance. A cet effet, nous nous proposons de consacrer deux articles ultérieurs, afin d'exposer notre philosophie concernant l'assurance sur la vie.

Ces articles sont fournies au Journal par le docteur O.F. Wright de Vancouver. Le docteur Wright est président de la publicité. Conseil de l'assurance et de placements de l'Association dentaire canadienne.

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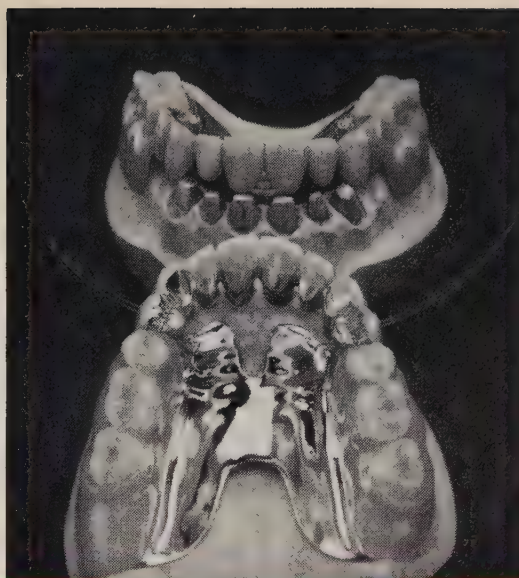
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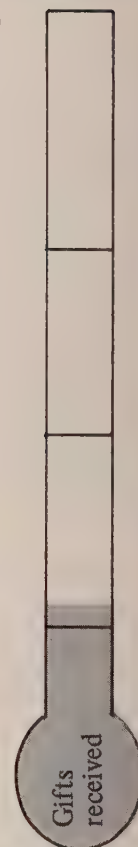
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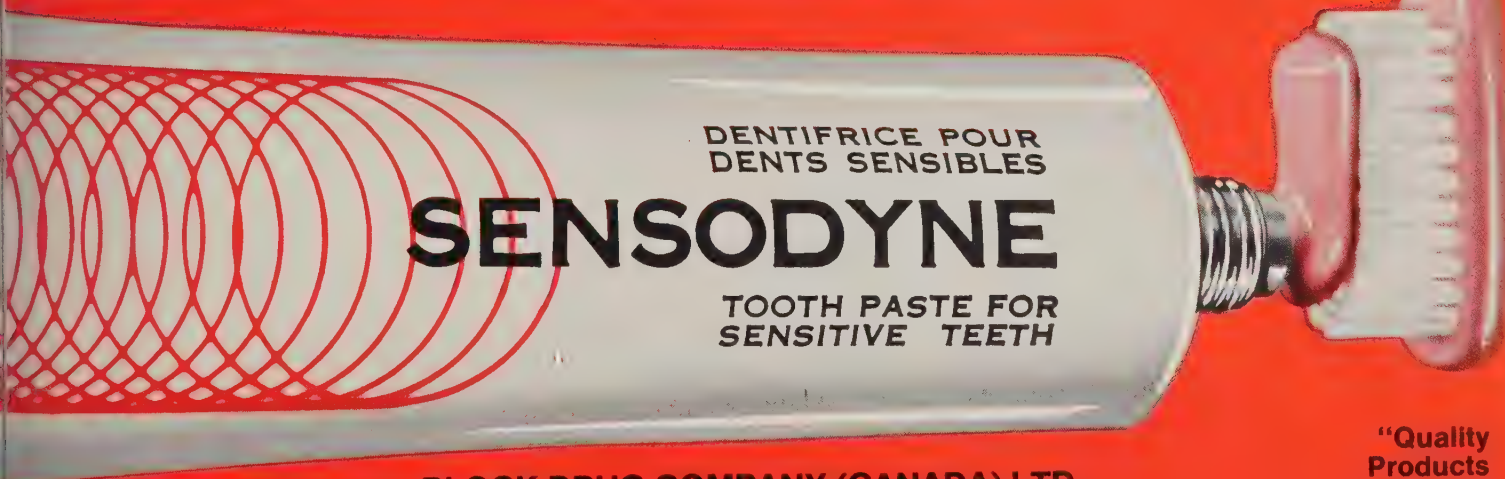
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*J. McCutcheon, Dean
Faculty of Dentistry
University of Alberta
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"Having held administrative posts in Canadian dental education since the time the Canadian Fund For Dental Education came into existence, I may speak with some warmth and from personal experience on the beneficial and influential role which CFDE has played in dental education through those years. In my view, the most significant contribution has been in the Fund's fellowship program which has greatly assisted dental schools in their efforts to acquire highly qualified teachers and researchers. Further, the annual unrestricted grant to our schools is very much appreciated. Each year unanticipated and, therefore, unbudgeted projects of real merit are brought forward in every faculty. The availability of these funds makes immediate action possible to the great advantage of Canadian dental education. Specific project support from the fund is always appreciated.

During my current term as President of the Association of Canadian Faculties of Dentistry, I have been particularly aware of the strong support which the CFDE has given to that association. Without the three major grants from the Fund, totalling \$9,000, in the early years of the existence of the ACFD, that association may very well have failed. Of particular note is the grant of \$5,000 which the Fund made available to support a comprehensive Canadian dental library survey carried out by the ACFD in recent years. The now completed report of that survey will undoubtedly influence the development of dental faculty libraries in the future.

There is no doubt that the CFDE has played and is playing a most significant role in the progress of Canadian dental education."



"Everybody can use a boost. CFDE needs one now but usually it does the boosting for students and teachers in Dentistry.

The annual survey of graduate and postgraduate students conducted by the Association of Canadian Faculties of Dentistry provides considerable information on the lives of graduate students. A common experience related by the students, and in fact experienced by me, is that the costs of graduate education exceed all expectations. CFDE is a Relief Fund! CFDE helps financially but it also seems to say "Canada and Your Profession are Interested in You". A great boost!

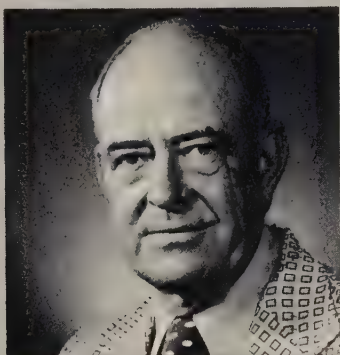
The financing of the Biennial Canadian Conference on Dental Research and Education as well as other support to the dentistry faculties and teachers demonstrate a continuing interest. Another great boost!"

*Dr. Douglas V. Chaytor
Faculty of Dentistry
Dalhousie University
Halifax, Nova Scotia*



*Dr. Jean L. Bertrand
Dorval, Quebec*

"It is the only national charitable organization collecting and distributing voluntary gifts in support of dental education and research. Furthermore CFDE is working hard to move dentistry ahead, and as a member of the profession I think I have an obligation to support it."



*Dr. Malcolm J. Gibson
Port Huron, Michigan,
U.S.A.*

"I received my DDS degree from the University of Toronto in 1947 and therefore feel I have an obligation to support Canadian dental education and research" — (Dr. Gibson makes these donations even though, as a resident of the USA, he cannot claim income tax exemption.)



*Dr. W.D.M. Wright
Cobourg, Ontario*

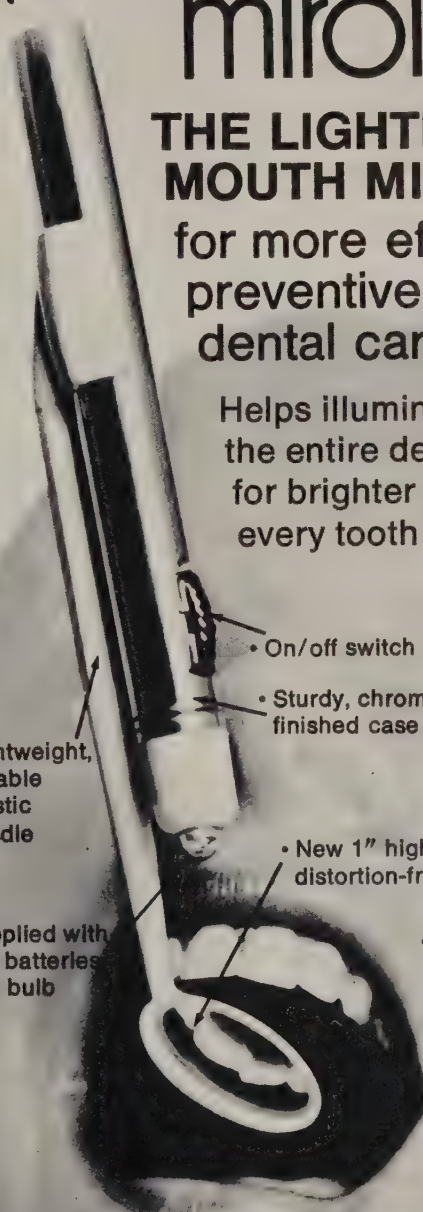
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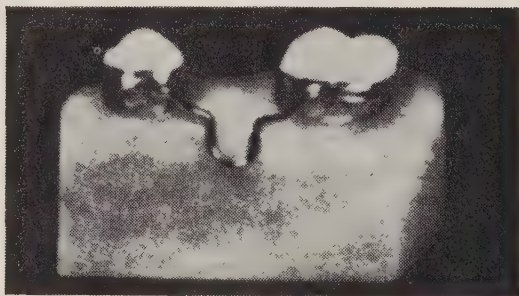
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Cost benefit analysis: Application to dental services

R.M. Grainger,* DDS, MScD, DDPH, RCDC

In recent years, health care has shifted more and more into the public sector of affairs because vast sums of public money are being committed for the education, services, research needs and necessary facilities of dentists, physicians and other health personnel. Involvement of government, as a third party, in the traditional doctor-patient relationship forces some changes. Previously, the profession's sole concern was to do what was judged to be best for and agreeable to each patient. When payment for services to a whole group of people comes out of the public treasury, or insurance funds, new accountability requirements bring constraints as to the type of services rendered, studies of the efficiency of the delivery system, and even concerns for the effectiveness of each service being rendered. Thus the dental profession must choose whether it will take the initiative in its own affairs or wait until modifications are demanded by the third party. In anticipation that the former course of action will be followed, it is appropriate to begin examining some of the economic theory and managerial science methods currently being used by governments and large corporations, and with which the profession will have to become familiar.

General principles of cost benefit analysis

One outgrowth of general decision theory and operational research, "The Planning, Programming,

Budgeting System" (PPBS) was originated in Washington to help the Bureau of the Budget know what is involved when funds are being allocated for government programs. The principal objectives of PPBS are: to make goals and objectives explicit, to weigh the consequences of alternatives as carefully and objectively as possible, and to set up a systematic process for decision making. It is supposed to overcome: ignorance of the effects or outcomes of projects, incremental budgeting, "squeaky wheel" budgeting, funding projects which have cross-purposes and locking in of future funds — all of which plague decision-makers. Cost benefit analysis is one of the procedures used by PPSB to weigh the consequences of alternative actions and arrive at logical priorities.

Weighing of alternatives has become very important to the science of business management, to military planners, to welfare administration and, more recently, to health care administration. There are three slightly different versions of cost benefit analysis, depending on the units involved on each side of the equation.

	Project Cost	Output benefits
Cost benefit	\$	\$
Cost effectiveness	\$	X
Effort effectiveness	Y	X

For true cost benefit, both sides of the equation are expressed in dollar values; for cost effectiveness the right side may be any appropriate output unit. When this is used by the military in such exercises as comparing air versus sea transport, the effectiveness measure may simply be the number of military personnel moved. In the health field it may be cases treated, reduction in mortality, or if you will, healthy teeth, mouths, etc. The third variation, effort effectiveness, commonly substitutes man-

*Director of Bureau of Statistics.

This address was presented in February 1973, in the seminar series of the National Dental Caries Task Force, NIDR.

hours of particular types of labour for cost dollars. The true cost benefit analysis with both sides of the equation expressed in dollar values is probably preferred at higher budgeting levels because it gives the greatest flexibility and comparability among alternatives. In this brief description, cost benefit is used loosely as a general term for the analysis process — the units will be often forced upon us by the nature of the investigation.

The costs and benefits involve a time factor over which they may accrue. The usual analysis calls for expressing both in pro-rated current dollars. As a simple example, as long as we are dealing with positive inflation, \$100 received today is worth more than the same amount to be received three years from now — because if we get the money or benefit today we can re-invest it and have more to show at the end of three years. Thus, a benefit that will not accrue for 20 years is of less value than if we could get it today. Commonly, an interest rate, such as that of the Federal Bank borrowing rate, is used — at this time about 8 per cent. Depending on how you define the beneficiaries of a project, the interest which “cost money” could have earned if it had been just invested, or if it had gone into another project, may have to be added to the real cost. This is quite obvious in the case of an industry, but may be more difficult to appreciate at the government budgeting level. Both the costs and the benefits must be calculated for the same point of time, usually the present. Thus present costs might be the sum of the current costs, discounted future costs and costs of not using the funds for alternative projects. Benefits, if not immediately forthcoming, would be discounted to their present value. Summing up: benefits deferred are worth less and costs deferred cost less, but in each case the deferral time must be taken into the calculations.

When the costs and benefits have been determined for various alternative activities they can be ranked according to the magnitude of the difference between the benefit and the cost, or as the ratio of the benefit divided by the cost — either expression is known as the efficiency measure. However, a second criteria, called the equity factor, is usually also considered. This refers to distribution effects of an activity, e.g. when the activity causes benefits or costs to be shifted from one part of the population to another. In some situations, unfair distribution effects of an otherwise efficient project are compensated by direct aid to the parties receiving negative benefits, e.g. a law enforcing conservation of fishing resources for the long-term good of a nation might take away the current livelihood of some fishermen and they should be compensated.

This brings us to discussion of a critical issue in the conceptualization of any cost benefit analysis — definition of the populations who will be considered to be involved in the costs and in the benefits. Almost any high level budgetary decision has an effect on the economy of a large complex society analogous to dropping a pebble into a pond of water — the waves spread out in all directions then rebound off the banks causing situations of fantastic complexity — the domino effect. We may have to limit this by deciding which populations will be principally or significantly involved and let the rest go, in order to avoid endless data collection. As alluded to above the other important consideration regarding populations revolves around the point that those who pay the cost may or may not be also the beneficiaries. The first case, where the payee and the beneficiary are the same, is common to the industrial world where alternative projects are ranked and selected according to the most desirable output likely to accrue to the industry. Another example would be governmental support of education wherein benefit returns to the government in terms of higher taxes paid due to higher income earned by the trainees. The second case, where the persons paying the cost are not the same as those benefiting, is more common in high governmental budget decisions. Frequently, the “Robin Hood” philosophy is being followed wherein the rich are taxed to aid the poor directly through welfare payments called “income equalization,” or indirectly by using tax money to distribute such things as medicare or denticare to poverty or marginal income groups.

These two criteria, efficiency and equity, should be integrated in some way for ranking a project according to highest priority. Some of the common courses of action are:

1. Ignore distribution and exhaust the budget on the most efficient projects.
2. Ignore efficiency and concentrate on projects having the most desirable distribution effects.
3. Establish a minimal acceptable level of efficiency and distribute according to equity.
4. Establish a minimal acceptable distribution requirement and fund according to efficiency.
5. Use some mathematical formula involving both criteria.

In any case, a trade-off is usually necessary and in the end the real budget priorities are set using the best judgment of the decision makers after seeing the evidence.

Before leaving the general discussion, a few other pitfalls and special problems must be mentioned. Sometimes costs and benefits are difficult to quantify, and hence, there is a danger that

projects with abstract effects or outputs, the worth of which depend on value judgments, may not be treated as well as they should be. How much dollar value should one place on good oral health as a project output? In the United States with regard to compensation of war veterans, the dollar values representing the handicap of specific disabilities to a wage earner, such as loss of an arm or leg, have been estimated. Inability to set a very impressive dollar value on loss of teeth, malocclusion, etc. has plagued dental health administration over many years making it difficult to support budget requests. Probably the best we have done is to relate the handicap to the cost of treatment for those who are concerned enough to have treatment and possibly add the wage equivalent of time lost from work when at the dentist's office. Until a better answer to the problem is available, this sort of measure may have to be used.

Both costs and benefits have political and social values that cannot be ignored when government budget priorities are considered. Neglect occurring to a minority group will certainly receive more attention these days than if similar neglect is distributed throughout the whole population. How such factors should be weighted, or how much these social factors should influence the economic ranking of projects, are matters for intelligent judgment. Furthermore, public values change over the

years and we have all witnessed projects being initiated during times of high public excitement which, if considered calmly, were not really high priority.

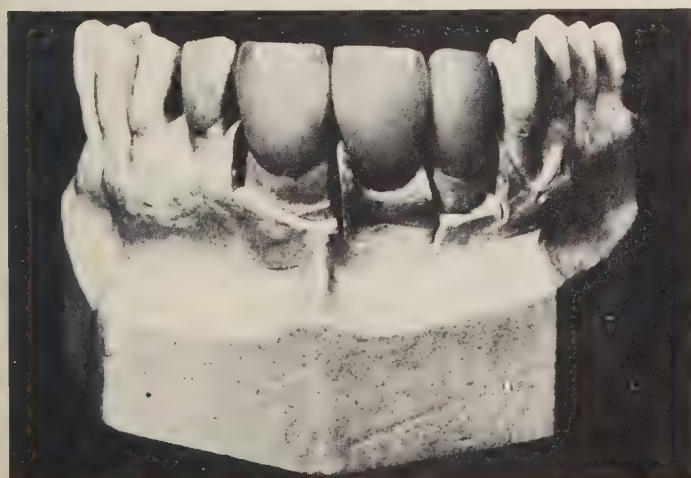
When assessing costs and the values of outputs which are going to accrue over a period of time, they may be drastically altered over this time; hence one must consider risk and uncertainty. There is no better example of this than budgeting for research activity. The output of research can be readily valued — if it is successfully completed. But if the research is a long-time activity or never successfully completed, the funds allocated to this research will have been the cause for an alternative project being left undone as well. Thus, in the public sector of budgeting, if we have more of one thing we will have less of another, and no matter what selection is made, the cost has to be borne by someone.

A further problem is that of evaluating output when the benefits or effects are not permanent, and hence, where the costs are ongoing because of need to repurchase the same or related benefits. Looked at coldly, health care is of this sort: if mortality is reduced there is more morbidity; when the infectious diseases were controlled there were more cases of cardiovascular disease and cancer to be treated; when you save teeth from caries you

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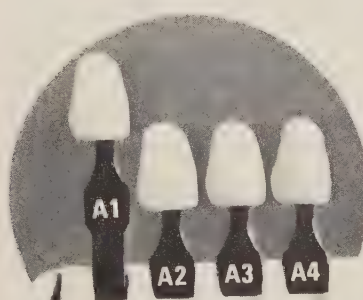
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have more periodontal disease to treat, etc. Lastly, before undertaking cost benefit analysis, one needs to be sure that the analysis itself will not be more costly than its benefits. Every investigation costs something, so we must be sure we do not spend dollars in order to save pennies. Many things are a matter of common sense — and that is about as far as you can push them.

Summing up, one might say that situations are rare where the ideal cost benefit analysis can be completed. It is often an exercise in frustration — nevertheless, beyond all its deficiencies it always has some solid positive result. It does force us to set aside preconceived value judgments, see our activities as they affect society as a whole freed from our own vested interests, and above all, educate us concerning real issues so that our judgment will be better.

Application of cost benefit analysis to dental affairs

Most important, and most difficult for a health profession such as dentistry, is to decide whether it should look at dental health from the viewpoint of the providers of the service, from that of the receivers of the service's benefits (the interested public) or from a third party viewpoint, such as a government which weighs the cost benefit of dental care and trades it off with alternatives such as education and public works. The government's viewpoint is probably too difficult and too far outside the field of competence for a profession to attempt. However, the profession should strive toward the public's position and direct its thoughts toward the evaluation of service alternatives and the economics of making them available to the public. At the same time, because the dentists are a professional group (and not an industry motivated purely by profit) they should try to rationalize, serving the best interest of the public with the necessity of earning a living commensurate with their own educational investment. Where to begin is the problem — there are so many new things to consider which the profession has never had to consider in depth before.

The first studies must focus on the efficacy of each treatment or service, *per se*, because no matter how economically it is distributed to the public an archaic procedure is still of little value. Secondly, the most efficient arrangements (manpower types and clinical organization) for distributing the service have to be worked out and the total cost benefit calculated. The efficacy of the service and the distribution system interact to effect the cost benefit. For example, the benefit of using a therapeutic dentifrice may be less than that

derived from an agent topically applied in the dental office, but in terms of cost benefit, the dentifrice can still rank high because the labour cost is absent. Further, the cost benefit ranking of a topical fluoride application will be higher if the labour costs are lowered through using auxiliaries rather than dentists.

However, the type of manpower which can be used is subject to serious constraints in the practical sense. These are mainly related to the size of population available to a particular dental office and hence the frequency with which a specific operation needs to be done on a given day. A highly efficient but narrowly trained auxiliary can only be used efficiently in an area where there is enough work to keep him fully employed. In smaller communities, it is obvious that the fully trained dentist who can fill his day with a wide variety of activities is most practical overall, even though some of the services he performs could be rendered at a higher cost benefit factor by an auxiliary. This line of thought suggests a need for the profession to define various "teams" or manpower units which would be most practical to operate under various conditions.

Introduction of the third party in the form of government or an insurance company which is in effect purchasing bulk services in huge quantities could lead to utilization of higher quality services. Often, no doubt, a private individual purchasing dental treatment is over-influenced by its immediate cost and gives too little regard to the true long-term value. As a crude illustration, if service records show that gold inlays last three times longer than plastic restorations and (considering the labour costs of repeated treatment) do not cost three times as much, then the cost benefit of the gold inlay is greater. Thus, the volume purchaser of dental services would actually reduce its long-term expenditure by insisting that only the higher quality service be performed. All preventive services are, at least theoretically, in this category but the profession has an obligation to demonstrate the cost benefit advantages through careful analysis if it expects the government to accept them in planning.

As the reader considers how cost benefit analysis can be applied in the dental field, it will become apparent that the general principles and the special problems still apply. Some of these will be touched on briefly because they will not be able to be ignored.

Whereas costs can generally be estimated with sufficient accuracy for practical purposes, it will be recognized quickly that the translation of oral health benefits into dollar equivalents involves value judgments which vary with the socio-

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economic background of a society. If one is attempting the cost benefit comparison of a caries preventive program with a program of restorative dentistry, what additional value in dollars should be added to the output of the preventive program because it leads to intact teeth rather than perfectly restored teeth? Both may function equally well for the lifetime of the individual. Should some weight be given to the discomfort or pain that an individual may encounter if by some far out chance it happened to be cheaper to restore teeth than prevent caries? Is it valid (if no satisfactory premium can be given to intact teeth over perfectly restored teeth) to estimate the benefits of a preventive program in terms of restorative service costs that are avoided?

Equity, or distribution differences, are also to be encountered as the study of dental economics develops. If the available manpower for the next decade is fixed by the output of the currently existing dental schools, an emphasis on dentistry for children must lead to a decrease in services for adults. Services made more available to special groups such as welfare recipients (however justified) will reduce the time available for the rest of the population which previously occupied the dentists' full time. If one is justified in assuming that oral health affects the entire well-being of the individual, reduction of services to the active wage earning class could have its repercussions so that the distribution change may need consideration. It may be recognized that shifting interest toward provision of services for minority groups is a manifestation of current attitudes in our society and in time a return to the more traditional viewpoint

whereby the welfare of the individuals upon whom the national productivity depends may be anticipated. Because of these shifts in public attitudes the dental profession must maintain flexibility and not allow all its resources to be committed to one line of action.

A final word must be said about the current and potential value of research, particularly in the preventive field, and its possible effect on dental manpower requirements. As stated previously the cost benefit of research of the long-term type conducted by dental scientists is very hard to assess. But one thing is clear, setting aside a possible dramatic research breakthrough, the profession has been far too slow utilizing what is already known. Many dental authorities are convinced that dental caries is now preventable if only the public were educated to observe simple procedures relating to diet and oral hygiene. In conducting these studies, one thrust to be considered must be the feasibility of reducing dental disease by public dental health education, because the ultimate reduction in labour costs is found when the public do things for themselves.

To use a common cliché, dentistry, as a health service, has been emerging slowly from its "cottage industry" methods during the last decades but the demands of modern society have precipitated a need to move more quickly if the initiative is to remain in the hands of the profession. Third-party intervention is a manifestation of the public interest in the improvement of the present system and the profession must respond by introducing serious studies.

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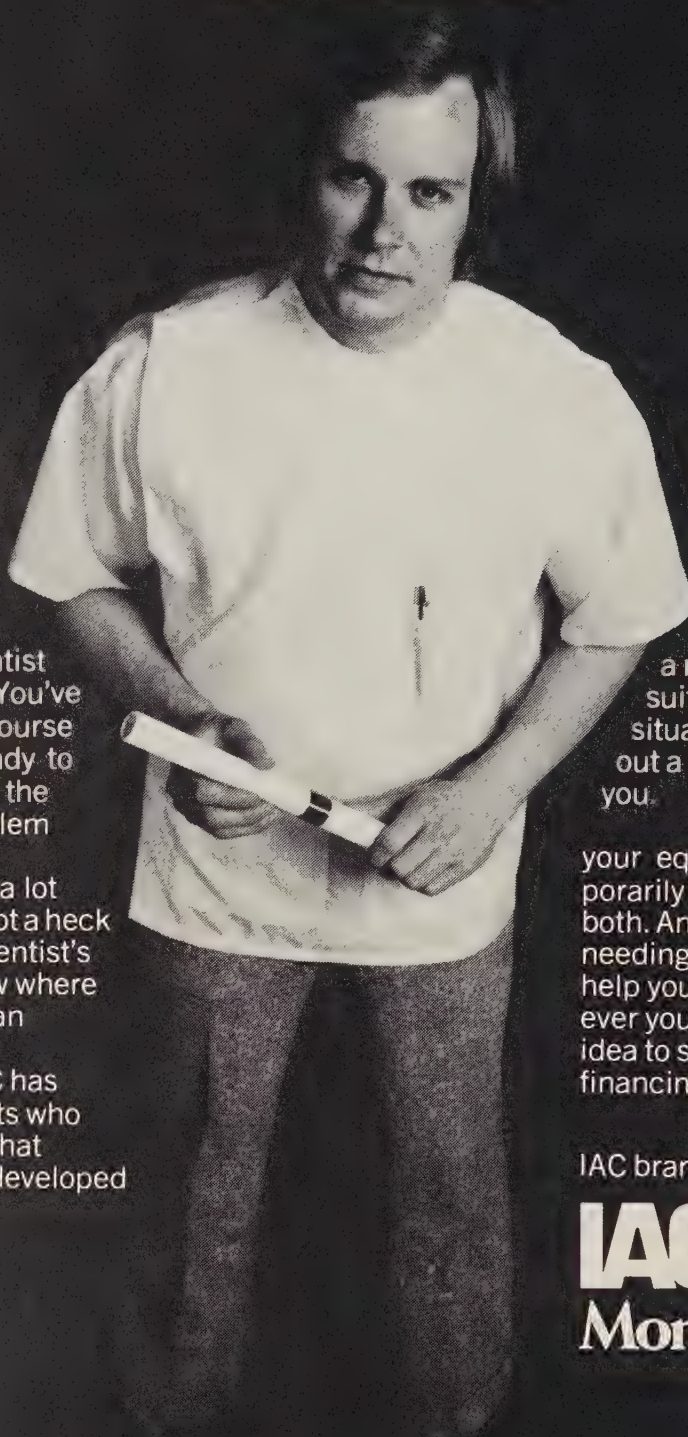


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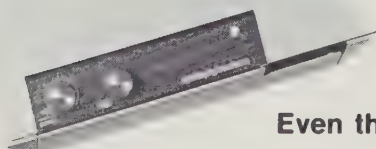
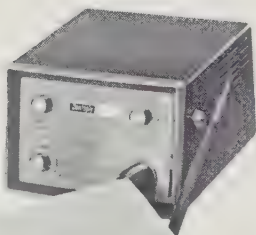
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A systematic approach to antibiotic control of dental caries

H.V. Jordan, PhD
Boston, Massachusetts

Preliminary trials with oral applications of gels or pastes containing vancomycin have shown that agent's promising ability to suppress plaque populations of Str. mutans. Antibiotics selected for caries control should be bactericidal against gram-positive organisms and should not induce hypersensitivity. They should also be capable of direct delivery to the site of disease. Str. mutans, a primary pathogen in dental caries, can serve as a target organism for assaying optimal therapeutic dosages, concentrations and rates of applications for such agents.

Les essais préliminaires de l'application buccale de gels ou de pâtes contenant de la vancomycine démontrent la valeur prometteuse de cet agent pour éliminer la prolifération de la plaque de type mutans. Les antibiotiques choisis pour réprimer la carie doivent présenter un caractère bactéricide à l'égard des organismes gram-positifs, sans entraîner d'hypersensibilité. De plus, il faut pouvoir les appliquer directement au siège de l'affection. Le type mutans, un pathogène primaire de la carie dentaire, peut servir de milieu d'essai pour déterminer le dosage thérapeutique idéal, de même que le titrage et la fréquence de l'application des agents de ce genre.

In the area of prevention and control of dental caries the field of dentistry appears to be reaching a plateau of effectiveness at the present time. We have arrived at a point where the accumulated knowledge of the past has been condensed into certain relatively effective but incomplete control measures. A significant segment of the population now benefits from the protective effect of fluoride, mainly through water fluoridation. In addition, much time and effort are expended in teaching the importance of good oral hygiene and the dangers of excessive sugar consumption. But experience shows that these measures control only a certain proportion of the problem in the public at large and it is still necessary to rely heavily on the back-up of restorative dentistry. Thus it seems opportune to ask "Where do we go from here?" Certain options are immediately obvious to us. For one thing, these established control measures could and should be applied to a larger proportion of the population. Water fluoridation programs will eventually include communities not now covered by this effective dental public health measure. Dental public health programs could be expanded to include more individuals who have never visited a dentist.

Other possibilities of a more speculative nature exist and have been the subject of some research. Further studies on the uptake of fluoride may reveal more about the mechanisms by which this

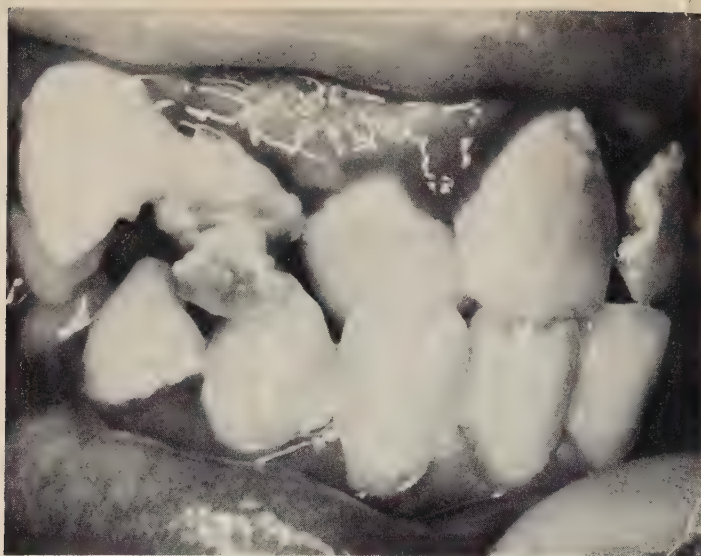


Fig 1 Severe plaque infection in a 14 year old schoolgirl. Note generalized heavy deposits, rampant odontolytic attack of the right lateral incisor, and obvious soft tissue response to the infection. Removal of the plaque revealed other areas of incipient decalcification.

element is complexed in the enamel¹ and could possibly suggest ways of increasing its caries-inhibiting potential. Since a high proportion of dental cavities originate in the occlusal pits and fissures it may be possible to block caries mechanically at this site by the use of some of the newer adhesive sealants.² Dietary control of refined sugar intake through the use of sucrose substitutes has also been considered.³

However, if we accept that dental caries is a plaque disease with a bacterial origin (Fig 1), one obvious approach would be a direct attack on the infectious component of the causative oral flora. The broad subject of chemotherapeutic intervention has been treated in more detail elsewhere,⁴⁻⁶ and the present discussion will be confined to some of the problems and possibilities associated with the use of antibiotics. Despite certain difficulties inherent to the intra-oral use of these compounds,⁶ there can be certain strong advantages in their use from a theoretical point of view. Their selective antibacterial spectrum and the discrimination in their inhibitory action between host and pathogen suggest a number of possibilities for rational therapy.

The use of antibiotics to control dental caries is a concept that originated almost at the start of the antibiotic age. In 1946 McClure and Hewitt⁷ reported a complete inhibition of experimental dental caries in rats by the addition of penicillin to the diet and drinking water. A drastic reduction in oral lactobacilli was also reported. Subsequent attempts to control dental caries in humans by incorporating penicillin into a dentifrice were somewhat equivocal. Hill and Kniesner⁸ observed no effect on dental caries in an institutionalized popu-

lation who used a penicillin tooth powder without supervised brushing. In contrast, Zander⁹ reported approximately a 55 per cent reduction in dental caries increment after one year in school children who participated in a controlled study utilizing a penicillin tooth paste. Other antibiotics have also been tested in experimental animals and found to exhibit a spectrum of anticaries activity that relates to their ability to inhibit gram-positive bacteria.¹⁰

A systematic approach to the problem

Since these early studies our understanding of the ecology of the oral microflora has increased considerably, particularly in regard to relative numbers, selective colonization and pathogenic potential of specific plaque bacteria. It has been established that rampant caries activity is associated with certain species of lactic acid bacteria, notably *Streptococcus mutans*. These organisms appear to colonize the tooth surface specifically¹¹ and thus are involved in plaque formation and maintenance. In contrast, other oral bacteria without significant odontolytic potential may preferentially colonize the soft tissues of the mouth.¹² Factors regulating the appearance and persistence of these oral pathogens are not completely understood but there is some information to indicate that the organisms are not easily implanted in the mouth except under specific circumstances.^{13,14} This would imply that the transmission of these bacteria is not likely to be a casual event. With this newer knowledge now available it should be possible to devise a more rational test of antibacterial therapy of dental caries than was possible in the past. At least four important considerations seem to be involved. Each of these will be considered separately.

Selection of an agent — The variety of antibiotics that have become available in recent years allows an increasing degree of latitude in selecting an agent whose properties are uniquely suited for use against dental caries. A number of workers¹⁵⁻¹⁸ have listed desirable characteristics that should be considered. It is generally agreed that an ideal antibiotic for intra-oral use should be bactericidal against gram-positive bacteria, particularly the lactic acid bacteria, and its use should not give rise to a resistant flora; it should be non-toxic to the host; it should not induce hypersensitivity in the host and it should not be absorbed through the alimentary mucosa. Preferably, the antibiotic should not be used in general medical practice because of the feeling that antibiotics employed in life-saving situations should not be used on a

broader scale in less critical applications. These are ideal properties, of course, and there may be potentially useful agents in which one or more of these properties are altered to varying degrees.

Mode of application — There are many possibilities for the intra-oral delivery of anti-caries agents. The usual procedure is to incorporate the compound into a tooth paste, mouthwash, chewing gum, troche or related vehicles. It is likely that patient acceptability and commercial feasibility have received strong consideration when these vehicles are employed. Though these factors are doubtless important, it would be more logical to test the concept by delivering the drug to the site of disease by the most direct and efficacious route. To this end it may be helpful to consider certain factors of the bacterial ecology of the mouth, particularly as they relate to *Str. mutans*. The preferential site for colonization of this odontolytic organism seems to be the tooth surface and it is not found to any marked degree in saliva. This has been demonstrated in man and experimental animals^{11,19} and seems related to its ability to colonize solid surfaces.²⁰ In contrast, other oral organisms have been demonstrated to colonize the soft tissues in the mouth.¹² Theoretically, this presents an opportunity to suppress pathogenic plaque organisms by selective antibacterial treatment of the tooth surface without significantly altering the balance of the oral flora elsewhere in the mouth. This can be accomplished directly through the use of custom-fitted dental applicators.^{21,22} With this type of device it should be possible to deliver a known concentration of the drug to the site of infection for a finite period of time. A further advantage of the applicator tray is that its close fit minimizes salivary dilution of the agent during its period of contact with the surface components of the dentition.

Drug concentration — It has been extremely difficult to define optimal drug concentrations and application times in relation to oral usage. In the past there may have been a tendency to think in terms of minimal inhibitory concentrations (MIC's) in broth culture test systems or of therapeutic blood levels. This is unrealistic, of course, considering the manner in which the plaque organisms exist in thick layers on the tooth, in crevices or carious lesions and on the protected approximal surfaces. Considerably higher concentrations of the drug are needed to affect the organisms in these relatively inaccessible areas. This can be illustrated by the wide range in MIC's of vancomycin for *Str. mutans* depending on how the in vitro assays are conducted.

Minimal inhibitory concentration of vancomycin for *Streptococcus mutans* grown under different conditions* Table 1

Strain	Growth conditions	MIC
SLR	Broth culture	1.0 μ gm/ml
	in vitro plaque	1%/5 min
6715	Broth culture	1.5 μ gm/ml
	in vitro plaque	1%/5 min

*Data supplied through the courtesy of Dr. John Whitney, Eli Lilly Research Laboratories, Indianapolis, Indiana

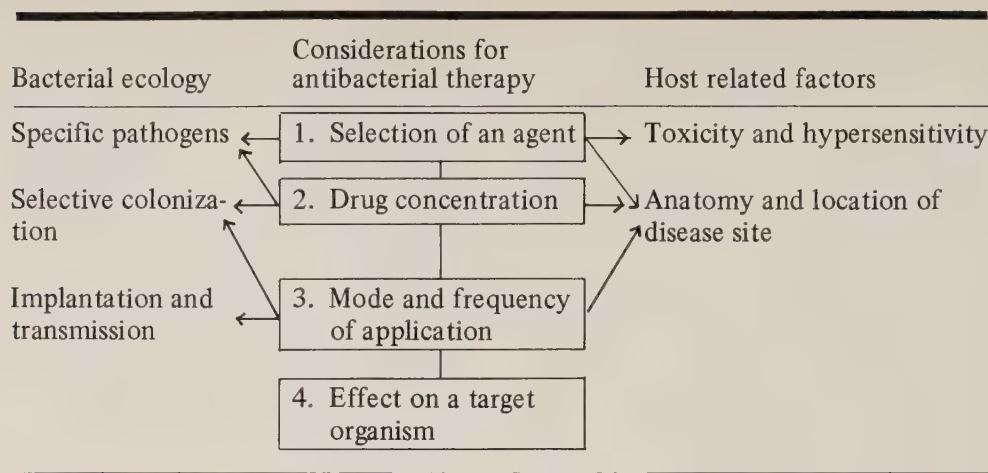
In a standard broth assay the MIC of vancomycin may be in the range of 1.0-1.5 μ gm/ml depending on the strain of *Str. mutans*. However, it may require as much as a 1 per cent solution for 5 minutes to completely kill *Str. mutans* cultures when they are grown as in vitro plaques on steel wires.²⁰ This is a ten-thousand-fold difference in concentration. The data are summarized in Table 1.

Related to the factor of drug concentrations is the vehicle in which the drug is incorporated. This should be formulated so as to provide the required rate of release of the active agent at a pH consistent with the desired effect.

Another facet of drug dosage involves frequency of application. A single exposure to an antibacterial agent could be expected to kill only those organisms in the readily accessible areas of the dentition and in the superficial layers of the plaque. Repeated exposures to the agent should accomplish a reduction in the levels of plaque bacteria by stages. As bacterial populations are reduced, gross amounts of plaque should also be reduced rendering the bacteria in the more protected areas of the dentition vulnerable to successive application of the antibiotic. A practical and effective approach may be designed around a two-phase therapeutic program that would involve (1) an initial therapeutic regime consisting of successive daily treatments calculated to reduce the populations of tooth surface pathogens to innocuous levels, and (2) regular maintenance doses involving weekly or monthly exposure to the agent for the purpose of holding populations of pathogens below harmful levels. The intervals for maintenance doses would have to be determined on the basis of bacteriological assays of the flora conducted during treatment. Possibly these assays would indicate that the time intervals between maintenance doses could increase in proportion to the duration of treatment. A similar schedule has been followed

Scheme for a systematic approach to antibacterial therapy of dental caries showing relationships to factors of host and bacterial ecology

Table 2



for plaque control in mentally retarded subjects using 5 per cent kanamycin, topically applied.²³

Effect on a target organism — One of the problems of determining optimal therapeutic dosages for oral use is the lack of convenient and reliable criteria for judging clinical effectiveness. In the case of dental caries the most reliable indicator would be progress and extent of the lesions themselves. However, it would be quite impractical to subject every promising laboratory development to an expensive and time-consuming clinical trial. Clearly, there is need to identify a bacteriological parameter that would reflect therapeutic effectiveness. Generalized monitoring of different groups of bacteria in the oral cavity usually are not sufficiently sensitive to indicate changes in the flora following antibacterial therapy. An example of this was the apparent lack of change in proportions of streptococci and extracellular polysaccharide-forming bacteria following topical erythromycin treatment for plaque control.²⁴ Oral spirochaetes which disappeared for periods of 5-18 weeks after antibiotic administration were considered an "index of efficacy." Screening of agents to control dental caries should logically assay a recognizable target organism that is involved in the disease. At the present time *Str. mutans* seems to be the most likely candidate for three reasons: (1) There is strong evidence that *Str. mutans* is a primary pathogen in dental caries; hence it is the logical target organism if the antibacterial agent is to work; (2) *Str. mutans* is a natural inhabitant of the tooth surface which is the specific site being treated with the agent; and (3) *Str. mutans* is a specific, recognizable organism for which reliable assay procedures have been developed.²⁵

It is possible that as further information about other organisms is obtained and as methods are developed for their recognition it may be useful to include them in assay programs.

The four point program for antibacterial therapy presented here may seem to oversimplify a complex problem. However, it is intended merely as a guide to possible approaches that could be taken rather than as a complete program in itself. Obviously a promising antibacterial agent would have to be subjected to clinical trial against dental caries. This phase of the problem is outside the scope of this discussion. For illustrative purposes a graphical representation of the scheme is shown in Table 2.

Vancomycin trials

The systematic approach outlined here for antibiotic control of dental caries is presently under test in a series of ongoing trials in our laboratory. Vancomycin, an antibiotic with the unique properties described previously has been tested in two preliminary trials for its effect on oral *Str. mutans* populations.²⁶ Although a detailed report of this work will be published elsewhere²⁷ a short résumé is included here in order to illustrate this approach.

In the first study, 13 school children received 15 minute applications of vancomycin twice daily for five consecutive days. The agent was applied directly to the teeth as a 15 per cent gel (maximum vancomycin solubility) using custom-fitted mouth trays. Plaque samples were monitored for the presence of *Str. mutans* over a period of 54 days. The organism could not be detected for the first

eight days after treatment and only in an average of 17 per cent of the subjects thereafter. Twelve comparable control subjects were treated in the same way except that treatment involved a placebo gel without vancomycin. *Str. mutans* was detected in an average of 77 per cent of these subjects over a 54 day sampling period — a highly significant difference from the treated subjects.

In the second study the same experimental regime was used to treat dental hygiene students with a 1 per cent vancomycin paste (CT-163, dental paste vancomycin, Eli Lilly Co, Indianapolis, Indiana). There was a significant difference between the oral *Str. mutans* populations of 12 vancomycin-treated subjects and 11 placebo-treated controls for the first week but not thereafter. The proportions of *Str. sanguis* in plaque appeared to be significantly increased for four weeks after treatment. The relationship of this tooth surface inhabitant to the caries process is not completely understood but it does not appear to possess the odontolytic properties of *Str. mutans*.

These preliminary studies would seem to indicate the possibility that significant changes may take place in the tooth surface flora following topical antibiotic treatment and that they can be recorded by methods which identify and enumerate specific recognizable organisms. Future studies will explore the use of more practical vancomycin concentrations in improved vehicles and the use of repeated maintenance applications.

Implications for dental therapy

Antibacterial therapy for the control of dental caries implies a significant and persistent change in the pathogenic flora of the dental plaque. In order to assess the potential of this approach it is necessary to consider the likelihood that this change in flora would take place. At present, we have little direct information on this aspect but certain reports in the literature may serve as a basis for speculation. Early studies on the infectious and transmissible nature of dental caries in rodents indicated a certain degree of constancy in the suppressed bacterial flora of these animals.²⁸ Treatment of hamsters with orally administered antibiotics resulted in a suppression of the infectious component of the flora related to dental caries. Family lines of hamsters derived from these treated animals tended in many cases to remain free of pathogenic elements of the flora normally conducive to dental caries. The extent to which this phenomenon would apply, even qualitatively, to humans is difficult to estimate, considering the

hazards of extrapolating this kind of data beyond the animal level.

Information more germane to the human situation is available from the studies of Harvey²⁹ on the treatment of periodontal infections with spiramycine. Apparent cases of long-lasting treatment effects led this author to conclude that in these instances there may have been a replacement of pathogenic bacteria by organisms less harmful to the host.

Some of the most encouraging results can be found in studies on patients receiving systemic penicillin and tetracycline treatment for rheumatic fever and chronic respiratory diseases.³⁰ The caries increment was estimated to be 69 per cent less than would have been expected for this group. A 50 per cent reduction was estimated one year after medication was stopped. An increased antibiotic effect appeared related to increase time on antibiotics. The calculated residual effect on dental caries tended to decrease with increased time off the antibiotics. The residual effect on caries seen in this study would argue for a significant change in the plaque flora that is not immediately reversed.

Studies on *Str. mutans* in humans indicate that this organism may not be easily established in the oral cavity, at least in adult subjects,^{13,14} and that it may not be easily transmitted between individuals¹⁴ or even spread from one site to another in the same mouth.³¹ These results could imply that if *Str. mutans* were eliminated or effectively suppressed it may not easily re-establish as a dominant part of the flora.

It should be emphasized that this discussion is not intended to advocate the unrestricted application of antibiotics to control dental caries in general. However, certain segments of the population may benefit from some type of antibacterial therapy because their dental problems seem to be uncontrolled by current treatment methods or outside the scope of presently available programs. Some examples would be: institutionalized populations, particularly the mentally retarded for whom dental care is usually inadequate and often nonexistent, geriatric patients and certain individuals with emotional or physical handicaps who lack the minimal dexterity required for personal oral hygiene, patients with xerostomia who are afflicted with unmanageable caries after head and neck irradiation, and populations of school children with rampant plaque infections that remain untreated because of unfavourable socio-economic circumstances.

In all of these cases the therapeutic approach should have as its goal well designed and well regulated programs aimed at treating these oral infections as legitimate medical problems. For

maximum effectiveness the antibacterial approach should be complemented by other established programs of caries prevention and control.

Summary

The present paper explores the problem of controlling dental caries through antibiotic suppression of certain pathogenic components of the plaque microbiota. An attempt was made to show how a systematic approach to the problem could be related to unique features of the microbiology of the mouth. Much of the discussion is speculative in nature and may require modification or re-evaluation as our knowledge of oral biology increases. Antibacterial control of dental caries remains a neglected area that requires a new look in the light of newer knowledge.

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The dental health of Indian children in the Sioux Lookout Zone of northwestern Ontario

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This article reports the caries experience, oral hygiene, gingivitis, stains, mottled enamel and occlusal classification of 174 Indian school children aged 5-13 in the Sioux Lookout Zone of northwestern Ontario. Caries experience in all age groups was very high. Drinking water supplies were generally fluoride-deficient.

L'article suivant donne un compte-rendu du nombre de caries, de l'hygiène buccale, de la gingivite, des taches, de l'émail marbré et de la classification occlusale de 174 enfants Indiens d'âge scolaire de 5 à 13 ans de la région de Sioux-Lookout dans le Nord-ouest de l'Ontario. Pour tous les groupes d'âge, le nombre de caries se révèle très élevé. Règle générale, les approvisionnements d'eau accusaient aussi une déficience en fluorures.

In 1969 the University of Toronto commenced a program for delivery of health care to the Indian population of the Sioux Lookout Zone of northwestern Ontario. This program involved the Faculties of Medicine and Dentistry and the Hospital for Sick Children in collaboration with the Medical Services Branch of the Department of National Health and Welfare.¹ To ascertain dental needs of children in the zone, a small pilot survey was undertaken in 1970, the results of which are reported in this paper.

Materials and methods

The Sioux Lookout Zone has been described by Bain and Goldthorpe.¹ The population consists of about 15,000 Cree and Ojibway Indians. Approximately 8,000 of these people are scattered over 100,000 square miles north of railway services (Fig 1). The only transportation is by float and ski-equipped aircraft and the only communication is by radio. There are six nursing stations located in Indian communities of 400 to 900 people. Each nursing station has satellites located 15 to 175 miles away and the only communication is by air or radio.

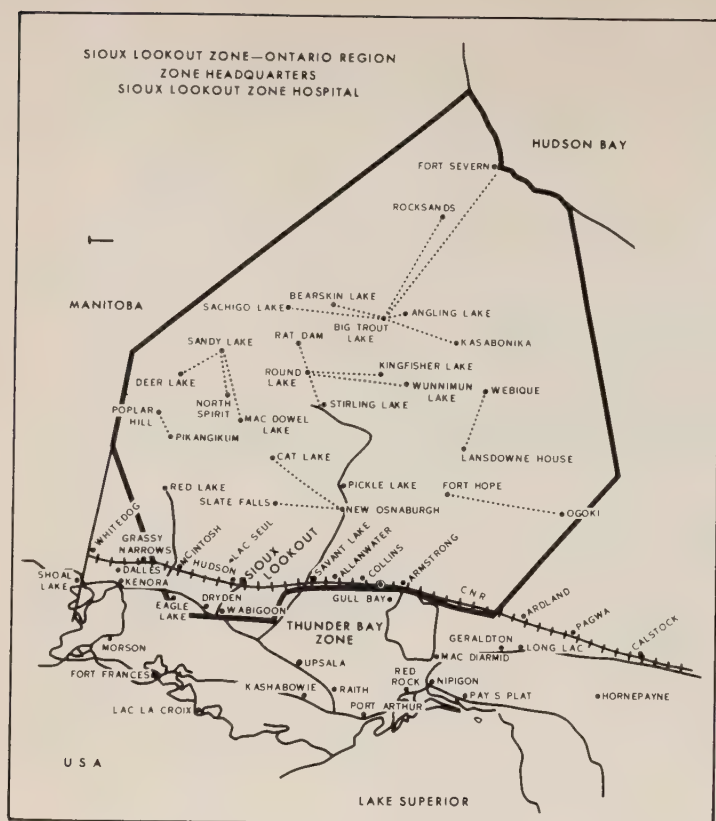


Fig 1 Sioux Lookout Zone

Fluoride content of the drinking water from different regions of the Zone

Table 2

Locality	Source	Fluoride content ppm
Angling Lake	Lake	< 0.1
Bearskin Lake	Lake	< 0.1
Big Trout Lake (Nursing Station)	Lake	< 0.1
Big Trout Lake	Lake	< 0.1
Deer Lake	Lake	< 0.1
Kasabonika	Lake	< 0.1
New Osnaburgh (Nursing Station)	Lake	0.4
North Spirit Lake	Lake	< 0.1
Pikangikum (Nursing Station)	Lake	0.3
Pikangikum	Lake	< 0.1
Pikangikum	Spring	< 0.1
Poplar Hill	Lake	< 0.1
Sandy Lake via Favourable Lake	Lake	0.2
Slate Falls	Lake	< 0.1
West Fort Hope	Lake	< 0.1

Sample selected — To ascertain dental health status representative of children living in the Zone, three communities were selected in order to cover areas both adjacent to rail and road services to the Zone and an isolated area requiring a float plane for access. Three schools were approached in three communities, Sioux Lookout, Lac Seul and Pikangikum (Fig 1). All available school children, numbering 174, were seen for this pilot examination (Table 1).

Dental examination — The children were seen during school hours by two examiners (J.A.H., K.C.T.). They were examined in school chairs and conventional dental chairs. Illumination was achieved by Anglepoise lamps with 100 watt bulbs and natural daylight by placing chairs in well-lit conditions. Replaceable mouth mirrors (Mirodent, Schweiger and Schweizer Ltd, Zug, Switzerland) and replaceable sickle shaped probes⁴ were used as in previous studies.⁵ Examinations were carried out at the respective schools without pre-cleaning the teeth; where necessary, however, the teeth were dried with a chip syringe before examination.

Caries standards of diagnosis were according to those specified by Jackson.⁶ Caries experience in the permanent dentition was assessed by the DMF index introduced by Klein, Palmer and Knutson;⁷ all surfaces were recorded to complete a DFS score, missing teeth were not included. The caries experience in the deciduous dentition was measured using the modified dmf index.⁸ Up to five years of age, all primary teeth were counted. Between six and nine years only primary molars

Number of children sampled in the survey

Table 1

Age	Permanent dentition	Primary dentition
5	17	17
6	24	24
7	32	32
8	27	27
9	20	
10	20	
11	12	
12	14	
13	8	
Total	174	100

Dental services commenced in the area three years ago.² Two full-time dentists are assigned to the Zone Hospital in Sioux Lookout and dental chairs have been placed in some nursing stations. Mobile dental instruments are transported between the stations and satellites, and services are given by dental interns and consultants working in these areas for two to four week periods.³

	Means + S.E.			
	Age 5	Age 6	Age 7	Age 8
Age	5.53 + 0.108	6.58 + 0.064	7.40 + 0.051	8.44 + 0.061
Caries-free teeth	8.06 + 1.096	3.71 + 0.530	2.72 + 0.445	2.15 + 0.388
df (teeth)	11.82 + 1.061	6.62 + 0.586	5.59 + 0.487	4.74 + 0.488
dmf (teeth)	11.94 + 1.096	8.29 + 0.537	9.25 + 0.442	9.85 + 0.387
df (surfaces)	24.41 + 2.877	14.92 + 1.986	12.66 + 1.448	11.07 + 1.881
dmf (surfaces)	24.88 + 3.098	23.17 + 2.575	30.56 + 2.354	35.96 + 2.251

and cuspids were recorded, as the normal shedding of anterior primary teeth could have influenced the findings. After 10 years of age no primary teeth were recorded because of the shedding of posterior primary teeth for similar reasons. A tooth was considered to be erupted if any part of the crown was observed in the mouth.⁹ In the study which was pilot, static and cross-sectional, the degree of caries was not measured in view of the findings of Jackson¹⁰ and later confirmed by Jackson, James and Slack,¹¹ which indicate that measurements of caries degree give little further information than the basic dmf values. Bitewing radiographs were not included in the clinical examination for this pilot study.

Oral hygiene was measured using a further modification of the modified debris index of Greene and Vermillion.¹² Six teeth were examined and were represented on the data forms pictorially: the upper right first permanent molar, upper right permanent lateral incisor, upper left second primary molar, lower left first permanent molar, lower left permanent lateral incisor and lower right second primary molar. If the primary molars were shed, the second bicuspid were substituted.

Each tooth was graded for debris; upper teeth and lower lateral on the labial or buccal surfaces and lower molars on their lingual surfaces. A score was given to each tooth as follows: 0 = no debris, 1 = debris covering not more than the gingival third, 2 = debris covering not more than the gingival two-thirds, 3 = debris covering more than the gingival two-thirds. The total for the six teeth was divided by the number of teeth present, usually six, giving a score in the range 0.0 (0.1) 3.0 for each child.

Gingivitis was measured using a modification of the Löe and Silness index.¹³ The same teeth used in the oral hygiene index described above were examined.

A score was given to each gingival surface – mesial, facial, distal and lingual: 0 = absence of inflammation, 1 = mild inflammation, 2 = moderate inflammation, 3 = severe inflammation. If a tooth

was missing, the next tooth mesial to it was examined. The total of 24 scores (six teeth by four surfaces) was divided by the number of surfaces examined, usually 24, giving a score in the range 0.0 (0.1) 3.0 for each child.

Wear was recorded using an index based on that suggested by Davies and Pedersen:¹⁴ 0 = no attrition, 1 = attrition of enamel, 2 = dentine exposed, 3 = exposure of secondary dentine or very rarely the pulp.

Stains were recorded according to presence and colour. If two colours were apparent the predominant colour was recorded.

Mottling of teeth was recorded, if present, according to whether it was considered idiopathic or non-idiopathic, and symmetrical or non-symmetrical. Records supporting the cause of mottling from a history of illness, injury or infection were not available.

Occlusion was recorded according to Angle's classification and by assessing clinically the skeletal relationship and associated crossbites and crowding.

Drinking water supplies – Drinking water was sampled from 15 acres throughout the zone (Table 2). The Public Health Laboratory Service, Department of Health for Ontario, completed the examination. Most sources of the drinking water had not been treated except at some of the nursing stations.

Results

Dental examination – The results are shown for each age group. The findings for the permanent dentition show the erupted teeth present for each age group and, therefore, at risk from dental caries.

Caries experience results reveal the high involvement of both primary teeth (Table 3) and permanent teeth (Table 4). The number of

	Age 5	Age 6	Age 7	Age 8
Age	5.53 ± 0.108	6.58 ± 0.064	7.40 ± 0.051	8.44 ± 0.061
Teeth at risk	1.59 ± 0.493	6.42 ± 0.656	9.84 ± 0.456	11.85 ± 0.409
Caries free teeth	0.24 ± 0.235	3.75 ± 0.539	5.69 ± 0.390	7.81 ± 0.311
df (teeth)	1.35 ± 0.411	2.67 ± 0.354	4.16 ± 0.136	4.04 ± 0.210
dmf (teeth)	1.35 ± 0.411	2.67 ± 0.354	4.22 ± 0.140	4.44 ± 0.187
df (surfaces)	1.59 ± 0.478	3.79 ± 0.574	6.91 ± 0.526	7.52 ± 0.602
dmf (surfaces)	1.59 ± 0.478	3.79 ± 0.574	7.22 ± 0.553	9.56 ± 0.801

Oral hygiene assessment of the children examined

Table 5

Age	Oral hygiene ± S.D.	
	Girls	Boys
5	0.96 ± 0.42	1.24 ± 0.54
6	1.25 ± 0.44	0.95 ± 0.78
7	0.0 ± 0.0	2.00 ± 0.0
8	1.42 ± 0.68	1.37 ± 0.59
9	1.37 ± 0.37	1.18 ± 0.43
10	1.39 ± 0.57	1.43 ± 0.38
11	1.33 ± 0.54	1.00 ± 0.20
12	1.43 ± 0.67	1.79 ± 0.48
13	1.56 ± 0.30	1.70 ± 0.0

Gingivitis assessment of the children examined

Table 6

Age	Gingivitis ± S.D.	
	Girls	Boys
5	1.26 ± 0.58	1.36 ± 0.48
6	1.14 ± 0.56	0.60 ± 0.60
7	1.03 ± 0.48	1.03 ± 0.64
8	1.42 ± 0.68	1.37 ± 0.59
9	1.40 ± 0.30	1.20 ± 0.44
10	1.39 ± 0.57	1.43 ± 0.38
11	1.33 ± 0.54	1.00 ± 0.20
12	1.29 ± 0.41	1.19 ± 0.61
13	1.46 ± 0.28	1.43 ± 0.32

caries-free teeth is shown for each age group. The oral hygiene debris index for all age groups is shown in Table 5. The index varies between 1.00 and 1.80 for most of the children sampled. The gingivitis index (Table 6) shows similar variation, with findings ranging between 1.00 and 1.50.

Percentage distribution of children with tooth staining

Table 7

Age	No. of children	None	Black	Brown	Green	Orange
5	17	94	6	0	0	0
6	24	88	4	8	0	0
7	32	88	6	6	0	0
8	27	93	7	0	0	0
9	20	85	5	10	0	0
10	20	75	15	0	0	10
11	12	67	8	8	0	17
12	14	71	0	7	0	21
13	8	50	0	0	0	50

Stains are shown as a percentage of children involved (Table 7). Few children show stains or reveal calculus deposits. Mottling is revealed in the teeth of less than 20 per cent of the children examined (Table 8). Occlusion measured by Angle's classification indicates a uniform distribution throughout all age groups (Table 9). The majority of children are "Normal" or "Class I."

Drinking water supplies — The findings from examination of the drinking water supplies throughout the region reveal a low fluoride content. The majority of sources in all areas is from untreated lake water (Table 2).

Discussion

The caries experience in all the age groups is very high. A study by Hargreaves¹⁵ of children in the Scottish island of Lewis, which until 25 years

Table 4

Means $\pm$ S.E.				
Age 9	Age 10	Age 11	Age 12	Age 13
9.57 $\pm$ 0.063	10.42 $\pm$ 0.071	11.47 $\pm$ 0.106	12.31 $\pm$ 0.083	13.84 $\pm$ 0.259
16.20 $\pm$ 1.007	19.85 $\pm$ 0.971	24.58 $\pm$ 1.011	25.07 $\pm$ 0.691	25.62 $\pm$ 0.596
10.15 $\pm$ 0.719	12.80 $\pm$ 0.551	15.67 $\pm$ 1.305	15.07 $\pm$ 1.102	13.50 $\pm$ 0.982
6.05 $\pm$ 0.822	7.05 $\pm$ 0.713	8.92 $\pm$ 1.384	10.00 $\pm$ 1.124	12.12 $\pm$ 0.811
6.65 $\pm$ 0.815	7.90 $\pm$ 0.781	9.67 $\pm$ 1.509	11.21 $\pm$ 1.302	13.62 $\pm$ 1.017
10.20 $\pm$ 1.055	10.00 $\pm$ 0.865	14.08 $\pm$ 2.604	15.36 $\pm$ 2.050	16.75 $\pm$ 0.996
13.20 $\pm$ 1.256	14.25 $\pm$ 1.467	17.83 $\pm$ 3.431	21.43 $\pm$ 2.950	24.25 $\pm$ 2.658

Percentage distribution of children with enamel mottling

Table 8

Age	No. of Children	None	Idiopathic Symmetrical	Idiopathic Non-symmetrical	Non-idiopathic Symmetrical	Non-idiopathic Non-symmetrical
5	17	94	6	0	0	0
6	24	96	0	0	4	0
7	32	78	0	13	9	0
8	27	89	0	0	7	4
9	20	80	0	10	10	0
10	20	100	0	0	0	0
11	12	100	0	0	0	0
12	14	79	0	0	0	7
13	8	100	0	0	0	0

ago was a predominantly isolated rural community relying mainly on the crofters' own produce, showed similar high caries in children living there today. In Lewis this high caries experience was associated with changes in environmental conditions during the past 30 years. The introduction of "Free Traders," "Indian Co-operatives" and the "Hudson's Bay Shops" in the Indian settlements has likewise given access to sophisticated modern foods including candies, confectioneries and refined carbohydrates. This is probably a main reason for the present poor oral health of the Indian children. Comparison with the dental health of the Indian children of 30 years ago is not possible as no data are available from that time. In the areas examined minimal fluoride is found naturally in the drinking water and no protection is available from this caries preventive source.

There is little stain or calculus in any age group of children examined. The differences shown in other studies and more recently endorsed by Hargreaves¹⁵ suggesting that the oral hygiene of boys is worse than girls at any given age, and that

associated gingivitis is also worse in boys, is not reflected in the present small pilot study of Indian children.

The assessment of mottling confirms the recent investigation of children in Lewis, who also reside in a low fluoride region,¹⁵ that enamel mottling or hypoplasia is found in less than 20 per cent of the children examined.

Conclusions

Studies such as these are important for obtaining sound base-line information before preventive schemes are introduced into a community. It is clear that the children of these Indian communities require extensive dental treatment. This type of survey fulfills several important needs:

1. It provides required information on the dental status of different communities in various parts of the world.
2. It shows the urgent need for further sampling of the dental health of a community with extensive dental neglect.

Age	Children	Normal	Class I	Class II (Div 1)	Class II (Div 2)	Class III
5	17	35	65	0	0	0
6	24	13	71	8	0	8
7	32	9	59	6	0	25
8	27	33	41	4	0	22
9	20	30	50	10	0	10
10	20	35	35	10	0	20
11	12	0	83	8	0	8
12	14	14	64	7	0	14
13	8	25	50	25	0	0

3. It demonstrates the urgent need for commencing a practical preventive program.

4. Such baseline data can be compared with data from future studies to see if dental services are adequately controlling and preventing dental disease.

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Dr. Hargreaves is professor and chairman, and Dr. Titley is an associate in dentistry and director of the Sioux Lookout Dental Project, Department of Paedodontics, Faculty of Dentistry, 124 Edward St, Toronto 101.

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Diagnosis and treatment of cervicofacial actinomycosis

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Three cases of cervicofacial actinomycosis, discovered within a few months of the opening of a new oral microbiological laboratory at the Montreal General Hospital, illustrate the relative frequency of the acute form of this infection. Bacteriological identification of the causative agent is imperative because the disease is indistinguishable from other acute pyogenic abscesses in its early stages. Dentists should suspect actinomycotic infection in patients who develop an antibiotic-resistant postextraction infection.

La découverte de trois cas d'actinomycose cervicofaciale durant les trois mois qui suivirent l'inauguration d'un nouveau laboratoire de microbiologie buccale au General Hospital de Montréal témoigne de la fréquence relative de cette forme d'infection aiguë. Comme cette affection ne peut être distinguée des autres abcès pyogènes, l'identification bactériologique de l'agent causal est essentielle. Le dentiste devrait envisager la possibilité de l'infection actinomycose chez les patients qui présentent une infection causée par une résistance post-opératoire aux antibiotiques.

Chronic cervicofacial actinomycosis is considered today to be rare. This is probably due to the widespread use of antibiotics in the treatment of postextraction infections. It is true that the classical picture as described in the textbooks is seldom seen but there is reason to suspect that the more acute form of the infection does occur. This type is indistinguishable in the early stages from any other acute pyogenic abscess and unless appropriate bacteriological methods are used to isolate the causative agent, *Actinomyces israelii*, many cases will remain undiagnosed. Not only is the diagnosis of actinomycosis dependent on the isolation and identification of *A. israelii*, but specific antibiotic therapy should be guided by the results of antibiotic sensitivity tests.

Recently, the Department of Dentistry of the Montreal General Hospital established an oral microbiological laboratory to which all specimens obtained from odontogenic and oral infections are sent for culture. The following report illustrates the frequency with which actinomycosis may be diagnosed when such a service is available.

Methods

The laboratory procedures are as follows. The exudate is initially examined macroscopically for the presence of "sulphur" granules. If these are present the exudate is washed in saline and the



Fig 1 Mature colony of *A. israelii* showing characteristic heaped up appearance.



Fig 2 Circumscribed purplish red indurated swelling over the mid-portion of the right sternomastoid muscle.

granules isolated for smear and culture. If the gram stained smear of these granules reveals tangled filaments resembling the actinomycete, a tentative diagnosis of actinomycosis can be made which must later be confirmed by culture.

Other specimens from cases in which actinomycosis is not suspected are smeared and examined carefully for the presence of fine branching filaments which might be suggestive of actinomyces species.

All specimens are cultured aerobically and anaerobically on blood agar plates. One plate is sufficient for aerobic culture, but because of the variety of anaerobic bacteria usually isolated from oral infections two or three plates are spread serially for anaerobic culture. The aerobic plates are examined after 18 hours' incubation for the presence of aerobic pyogenic organisms. The anaerobic plates are incubated at 37°C in Gas Pack Anaerobic Jars (BBL) for five days. They are then examined with the stereoscopic microscope, and identification of anaerobic bacteria other than *A. israelii* can be determined by appropriate bacteriological methods. It is important not to be misled when the plates are examined initially and other pyogenic organisms are identified. *A. israelii* is a strict anaerobe and grows slowly on primary isolation. It may take as long as seven to 10 days' incubation before the characteristic colonies are observed. These are rough, heaped up, glistening white and adhere tenaciously to the surface to the medium. They are then subcultured on actinomyces agar (BBL) in order to obtain a pure growth for the purpose of carrying out catalase and biochemical tests. Thioglycollate broth is used for primary inoculation of the specimen and for subculture of the actinomyces colonies. Antibiotic sensitivity tests are carried out with single paper

discs on a blood agar plate which has been inoculated from this medium. With the exception of the catalase reaction, all other tests are carried out in an anaerobic atmosphere (Fig 1).

Results

Case 1 — Patient A, a 50 year old woman, was referred to the dental clinic because of pain and swelling in the right submandibular region. Six months previously a lower right second molar had been removed. Because of associated swelling in the area and fever she received oral penicillin at that time. She responded well initially, but after one month the swelling recurred and she then received clindamycin for a period of one week. Unfortunately the patient was lost to regular follow up but when later questioned in the clinic she described persistent swelling of the right submandibular area with periodic discharge of small amounts of fluid through the overlying skin.

When the patient was first examined in the dental clinic, a tender, circumscribed, purplish red, indurated swelling of 4 cm in diameter was seen over the mid-portion of the right sternomastoid muscle with soft tissue swelling extending to the submandibular region. Intra-oral examination was unremarkable and her oral temperature was 98.5°F. The patient was not given any antibiotics at this time but was sent home with instructions to apply hot compresses to her neck. Two days later it was possible to incise and drain a fluctuant area. A specimen was sent to the laboratory. The exudate was watery and contained "sulphur" granules, smears of which showed gram positive tangled filaments. A tentative diagnosis of actino-

mycosis was made. The patient was treated with oral penicillin, G, three million units a day in divided doses. Cultures subsequently yielded *A. israelii* which was sensitive to penicillin and tetracycline but resistant to clindamycin. *H. aphrophilus* was also isolated. The patient continued on penicillin therapy for six weeks with a good result. There was no evidence of recurrence when examined two months later (Fig 2).

Case 2 Patient B, a 42 year old man, was referred to the dental clinic because of swelling in the right submandibular area. Ten weeks earlier an impacted lower right third molar had been removed with considerable difficulty. Three weeks later he developed marked swelling of the submandibular area, accompanied by pain, trismus and fever. The patient was given clindamycin for eight weeks, during which time there was relief of the trismus and some reduction of the swelling.

Examination revealed several raised indurated lesions in the right submandibular area. There were purplish red in colour, fluctuant and confined to the skin and subcutaneous tissue. Intra-oral examination was unremarkable and his oral temperature was 99.4°F. A small amount of thin watery fluid was aspirated from one of the fluctuant lesions and, when smeared, revealed a few gram positive fine branching filamentous rods. Cultures subsequently produced *A. israelii* which was sensitive to penicillin, tetracycline and clindamycin. The patient was given one million units of oral penicillin G three times a day in divided doses, and because of progressive improvement no further surgical drainage was required. After 12 weeks of antibiotic therapy the indurated lesions completely subsided, leaving only some residual discoloration. The patient is being maintained on antibiotic therapy and has been followed closely.

Case 3 — Patient C, a 52 year old man, whose history was difficult to obtain because of language difficulties, presented at the dental clinic for treatment with the following story. Approximately one month previously he had developed pain and swelling in the left anterior maxillary region, for which an upper left first bicuspid had been removed. The swelling persisted and he was treated unsuccessfully with several short courses of antibiotics which included tetracycline and penicillin.

Upon examination the patient was seen to be in considerable distress. His oral temperature was 102.5°F. The left side of the face exhibited

marked erythema and swelling extending from the upper lip to the supraorbital ridge. There were periorbital oedema with closure of the eyelid. Intra-oral examination revealed a fluctuant swelling in the maxillary vestibule. Intra-oral incision and drainage produced a small amount of creamy, foul-smelling pus which showed gram positive and gram negative cocci on direct smear. A tentative bacteriological diagnosis of a mixed pyogenic infection was made and the patient was given clindamycin, 150 mg four times a day. After two days the facial swelling began to subside but a localized subcutaneous fluctuant area required further incision and drainage from an extra-oral approach. The diagnosis of actinomycosis was not made until 10 days after the initial incision and drainage, when cultures of the pus obtained on that occasion revealed *A. israelii* as well as *Veillonella* species and *Peptostreptococcus* species. All strains were sensitive to clindamycin but resistant to penicillin and tetracycline. The patient remained on clindamycin for six weeks at the end of which time there was good recovery. There has been no recurrence of the infection.

Discussion

A. israelii was isolated from three patients in the first few months following the opening of the oral microbiological laboratory. In two cases, patient A and patient B, actinomycosis might have been suspected by an experienced clinician but was not recognized before admission to the clinic. This may have been because actinomycosis is considered a rare postextraction infection and too much reliance is placed on antibiotic therapy which is prescribed empirically for most pyogenic infections. Patient C, on the other hand, did not have the typical clinical picture which might have suggested actinomycosis, and it was not until the actinomycete was isolated by bacteriological culture that the diagnosis was made. As reported by Bramley and Orton,¹ this illustrates the type of abscess which may be confused with an acute pyogenic infection.

Actinomycosis is regarded as an endogenous infection as species of *A. israelii* are commonly found in dental calculus, carious teeth and deep periodontal pockets but the exact pathogenesis is unknown. Holm² feels that it is a mixed infection as species of *A. actinomycetemcomitans* and *H. aphrophilus* are often isolated as well as more commonly recognized pyogenic bacteria. *A. israelii* was isolated in pure culture only from patient B.

The clinical management of actinomycosis includes surgical drainage and treatment with antibiotics. Herrell³ was the first to suggest the use of penicillin and this has remained the antibiotic of choice. Tetracycline has been used alone⁴ and in combination with penicillin⁵ or streptomycin.⁶ It is recommended that antibiotic therapy continue for approximately six to eight weeks. The patients in this report had a good therapeutic result within this time interval but patient B, who responded well without surgical drainage, will have a prolonged period of therapy. Patients A and B responded well to treatment with penicillin, but patient C, who yielded penicillin and tetracycline resistant strains of *A. israelii*, illustrates why antibiotic sensitivity tests are necessary.

The practising dentist should be suspicious of actinomycotic infection in patients who develop postextraction infections that do not respond rapidly to antibiotic therapy. In these cases every effort should be made to obtain a definitive bacteriological diagnosis.

Summary

Three cases of actinomycosis are used to illustrate the advantage of an oral microbiological laboratory which will aid in the diagnosis of the infection and provide guidelines for antibiotic therapy.

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⁽¹⁾ Wade, A. B.,
British Medical Journal,
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Immediate mandibular reconstruction following resection

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This article is provided by courtesy of the Royal College of Dentists of Canada.

Immediate jaw reconstruction, done at the time of resection, is simpler for the surgeon and produces better functional and aesthetic results for the patient than delayed repair. Dr. Donohue describes the use and indications for bone and osteocartilaginous grafts and metal and plastic implants for jaw reconstruction following segmental resection. Three cases are presented to illustrate the results.

L'auteur évalue les avantages et les inconvénients de la reconstitution immédiate de la mandibule suivant la résection d'un tumeur. Le procédé simplifie l'intervention du chirurgien et apporte des avantages fonctionnels et esthétiques plus hâtifs que la restauration retardée. Le docteur Donohue décrit l'usage et l'indication de greffes osseuses et ostéocartilagineuses et d'implants en métal et en matières plastiques dans les cas de restauration mandibulaire, à la suite d'une résection segmentaire. Trois cas sont présentés à titre d'illustration. Le premier est celui d'une femme de 76 ans atteinte d'un épithélioma spinocellulaire. L'étendue de la résection de l'os et des tissus indiquait le choix d'une technique simple. Aussi la mandibule

fut reconstituée en y adaptant un tenon de Steinmann. Le second cas démontre une reconstitution au moyen d'un greffon osseux autogène prélevé sur la crête iliaque. Le patient souffrait d'un améloblastome de la mandibule droite. Quatre ans après l'intervention, la radiographie révéla la présence d'une tumeur récidivante dans la symphyse. A la suite d'une seconde résection segmentaire, la mandibule fut reconstituée au moyen d'une greffe de particules osseuses (particulate bone graft). Cette technique a l'avantage de ne requérir que très peu d'os cortical de la crête iliaque. De plus l'os spongieux utilisé présente un indice ostéogénique élevé. Le troisième cas comporte une reconstitution par voie intrabuccale à la suite d'une résection segmentaire de la mandibule. Cette technique a l'avantage de ne laisser aucune cicatrice cutanée après l'intervention.

When possible, immediate reconstruction of the mandible following total or partial resection is advantageous because it circumvents the physical and psychological trauma of facial mutilation. Fortunately, some degree of rebuilding can usually be done when a tumour is eradicated. The advantages of immediate reconstruction have been

Materials used for jaw reconstruction

Table 1

Material	Method	Type	Sources
Bone	Autogenous	Cancellous	Ilium
		Compact	Rib
		Cancellous and compact	Mandible
		Particulate	Tibia
	Homologous	As above	Fibula
Cartilage	Heterogenous	As above	As above
		As above	As above
		As above	As above
		As above	As above
	Composite	As above	As above
Synthetic materials	Metals	Osteocartilagenous	Rib (7, 8)
			Metatarsal
	Plastics		
Combinations			

summarized.¹ They are: access to the site is optimal; contraction and distortion of tissue, due to scarring, have not occurred; the patient can be protected from the psychological effects of extensive disfigurement; and nearly normal jaw function can be restored, depending on the extent of the tumour.

Immediate reconstruction is not feasible, however, when a particularly radical excision leaves insufficient soft tissue to cover a graft or prosthesis adequately. In previous irradiated tissues, reconstruction at the time of amputation may also be inappropriate because of the complications of radionecrosis. Other factors that must be considered are the age and general health of the patient and the type of neoplasm involved. Escofier's comments on the subject of immediate versus delayed rebuilding of the jaw are pertinent: "...the patient's rehabilitation should only be delayed in exceptional circumstances and for important reasons, because the root of the problem lies in the human drama of disfiguration rather than in regard to an over-academic therapeutical rigorism."²

Materials

Numerous materials have been advocated for jaw reconstruction; these are summarized in Table 1. The method selected in a particular case depends on the extent and nature of the tumour and the

availability of healthy, tension-free soft tissue flaps to cover the defect.

Autogenous bone is the best material for replacing the missing part.³ This is particularly true with vital, partly decorticated, autogenous bone grafts. The most convenient sources of such bone are crest of the ilium, ribs and, in smaller defects, the mandible itself.

Recently, particulate autogenous bone grafts as introduced by Mowlem³ and modified by Boyne and his associates^{4,5} have been used in the reconstruction of the mandible following tumour surgery. One of the advantages of this method is that repeated grafts can be taken from the donor site, usually the hip, if necessary. The major disadvantage is that this method requires the use of a metal mesh which may prove a hindrance in the face of infection.

De Fries, Marble and Sell⁶ have tried to obviate this drawback by using composite bone grafts. They used a lyophilized homologous mandible which was hollowed out to serve as a splint. The resulting cortical homograft was then filled with autogenous red marrow and cancellous bone from the ilium. These authors reported a satisfactory result after a follow-up period of 20 months.

Devitalized autogenous bone grafts have also been used occasionally when the resection involved the symphysis region. This technique has not gained popularity, however, because the chances of success are limited.⁷

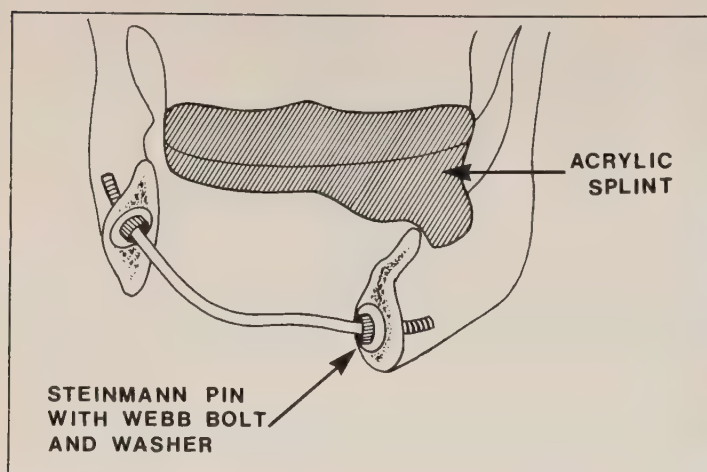


Fig 1 Case 1: Steinmann pin with Webb bolts and the pre-formed acrylic splint used in this patient.

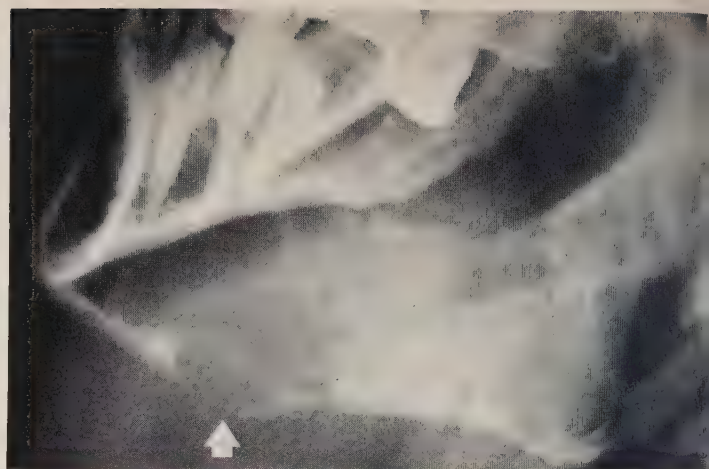


Fig 4 Case 2: pre-operative radiograph showing the extent of the tumour. The arrow indicates a perforation of the inferior border of the mandible by the neoplasm.

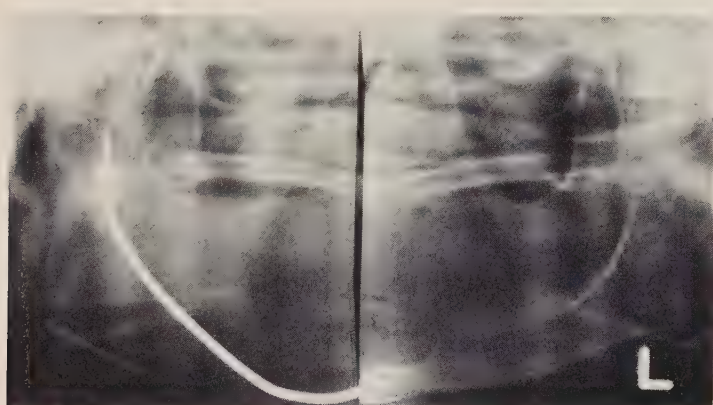


Fig 2 Case 1: postoperative panoramic radiograph taken three years after the operation.

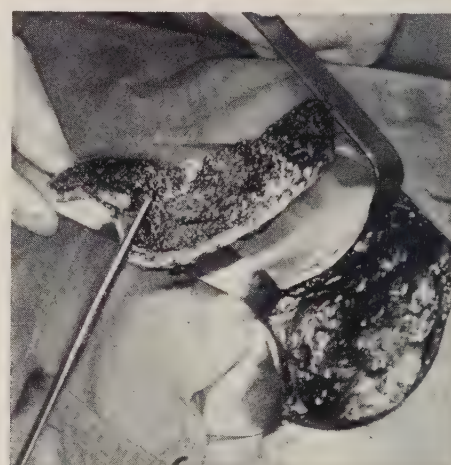


Fig 5 Case 2: decorticated graft taken from the crest of the ilium.



Fig 3 Case 1: clinical result three years after resection of the right mandible and chin. Immediate reconstruction was accomplished with a Steinmann pin.



Fig 6 Case 2: clinical result. Note the facial symmetry. The cutaneous scar, while present, is not evident in this photograph.

While both homologous and heterogenous bone have been employed, the results with this type of tissue when used in the jaw have not been good because of rejection phenomena.

Osteocartilaginous grafts using either a rib or one of the metatarsals have found favour when the reconstructive procedure involves the temporomandibular joint.⁸ The disadvantage of a rib graft in bridging defects in the body of the mandible is that the bone volume is small and mainly composed of cortical bone which is more slowly incorporated than cancellous bone and does not resist infection as well as the latter.

Synthetic materials are useful in correcting surgical defects, particularly when the patient's age or physical condition precludes the taking of a graft or where a radical resection is indicated.

Metal prosthesis in the form of rod, such as Kirschner or Steinmann pins, is used to maintain a more or less normal jaw relationship when there is little soft tissue available for coverage.⁹ More sophisticated metal prostheses of titanium, cobalt-chrome alloys or tantalum are available.¹⁰ These are used as pre-formed jaws or as wire mesh. One of the disadvantages of these materials is their restricted malleability, a drawback which can be partly overcome by making a template to reproduce the desired contour and size, and then adapting the final metal prosthesis to the template with a minimal amount of bending. With metal, too, the possibility of an electrolytic reaction or of corrosion fatigue after repeated cold bending should always be remembered.¹¹ Byrd and Holton¹² have used stainless steel mesh prostheses and report that these are easier to adapt to the jaw defect than chromium-cobalt alloys.

Alloplasty may on occasion be useful in jaw reconstruction, the two most popular materials being Teflon and silicone. Their advantages are inertness and non-wetability.¹³ Polyvinyl resins such as Ivalon possess poor tensile strength and tend to shrink, making them less suitable than the other plastic materials.¹⁴

The quick cure acrylic resins used by orthopaedic surgeons have no place in jaw replacement because they generate too much heat and irritate while curing and because they are not inert. However, pre-cured acrylic resin prostheses have been used in condylar replacement.

Combinations of bone grafts and metal prostheses as well as metal and plastic materials have been recommended under certain circumstances. However, Bränemark's¹⁵ suggestion that intermaxillary fixation is unnecessary when using combined bone grafts and metal prostheses seems unwarranted. It is difficult to see how a proper

intermaxillary relationship can be achieved without intermaxillary fixation when extensive jaw resection is indicated.

The following three cases are presented to show the advantages of immediate jaw reconstruction.

Report of Cases

Case 1 — A 76 year old, edentulous, Caucasian woman presented with a carcinoma of the lower right alveolar ridge in the mental region. The tumour was excised by means of a hemimandibulectomy extending from the neck of the right condyle to the left cuspid region along with a unilateral radical neck dissection. A Steinmann pin was adapted to the shape of the resected jaw, using a template to reduce the amount of bending of the pin to a minimum. The pin was buried in the proximal and distal bone stumps. Excessive penetration into the marrow cavity was controlled by abutting Webb bolts and washers against the proximal and distal stumps. Soft tissue closure over the prosthesis was achieved using the masseter muscle and by undermining the adjacent tissues of the cheek and floor of the mouth. Centric relationship was maintained by means of a pre-formed acrylic splint wired around the zygomatic arches and the remaining part of the mandible (Fig 1,2).

The advantage of the Steinmann pin in a radical resection is that, because of its small diameter and bulk, sufficient tissue can be mobilized from the cheek and floor of the mouth to cover the prosthesis despite extensive resection. The patient's recovery was normal. Four years later she showed a good functional result and the cosmetic outcome was considered adequate (Fig 3).

Case 2 — A 43 year old Caucasian man presented with an extensive ameloblastoma extending from the symphysis to midway up the ramus on the right side of the mandible (Fig 4). The teeth in the region of the tumour were removed and six weeks later an extra-oral partial subperiosteal hemimandibulectomy was performed, extending from the subcondylar region to the midline of the mandible. A lead template was then cut to the shape of the resected mandible, and an autogenous graft was obtained from the iliac crest and cut to the size of the template. After decorticating the entire graft except for a strip of cortex along what was to be the inferior border of the mandible (Fig 5), the fragment was fixed with wire to the stumps of the mandible. Intermaxillary fixation utilizing the remaining teeth and a pre-formed acrylic splint were used for six weeks. The immediate post-operative period was uneventful. Some months later a partial denture was designed. For the next



Fig 7 Case 2: panoramic radiograph taken four years after the initial resection. The radiolucent area, indicated by the arrow, was due to a fibrosarcoma.



Fig 9 Case 2: the Vitallium mesh in place following excision of the anterior part of the mandible. The arrow indicates the stump of the jaw.

three years the functional and cosmetic results were good except for a scar in the right sub-mandibular region (Fig 6).

A radiograph taken four years after the operation disclosed the presence of a recurrent tumour (fibrosarcoma) in the symphysis region (Fig 7). A second segmental resection was therefore carried out. This included part of the initial graft on the right side and extended to the first molar region on the left side. Immediate bony reconstruction would have been difficult at this stage because one hip had already been used as a donor site, and because we wanted to preserve the crest of the other hip for functional reasons. A particulate bone graft was therefore secured from the original donor site and placed in a Vitallium trough lined with a Millipore filter (Fig 8, 9). The metal prosthesis was fixed to the remnants of the mandible on either side and intermaxillary fixation applied using splints. The immediate postoperative period was complicated by a perforation of the mucosa directly over the graft site; this healed after a few weeks. Within six months of the second operation the patient was again able to wear a prosthesis and the functional and cosmetic results were considered satisfactory (Fig 10, 11, 12).

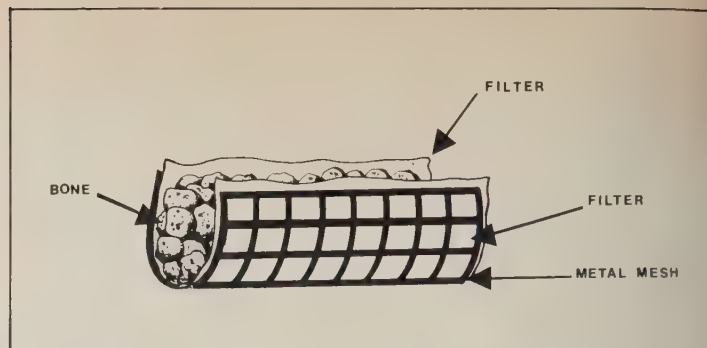


Fig 8 Case 2: a Vitallium wire mesh trough lined with a Millipore filter was used to hold particulate bone and marrow grafts derived from the original iliac donor site.



Fig 10 Case 2: postoperative result one year after resection of the anterior part of the mandible.

Case 3 — A 25 year old Caucasian woman presented with a hard tumefaction of the left mandible extending from the cuspid region to the angle of the mandible. The mass was so large that it completely covered the lower teeth on the affected side and bore the occlusal imprint of the opposing upper teeth (Fig 13). The swelling was later diagnosed as an extensive fibrous dysplasia.

Using an intra-oral approach recently described by Obwegeser,^{16,17} the mandible was first degloved. The tumour was then excised by means of an intra-oral partial subperiosteal hemimandibulectomy extending from the cuspid region to the angle of the mandible and including the teeth involved by the tumour mass (Fig 14). A lead template was cut to the size and shape of the resected mandible. Using this as a guide, a block of bone was obtained from the crest and inner plate of the ilium. The resultant bone block was then partly decorticated, leaving cortical bone along what would be the lower border and lingual plate of the jaw. Greenstick fractures were made in the graft in order to adapt it to the curvature of the mandible. The graft was fixed with transosseous wires to the distal and proximal stumps of the mandible and the wound was closed with 3-0 silk

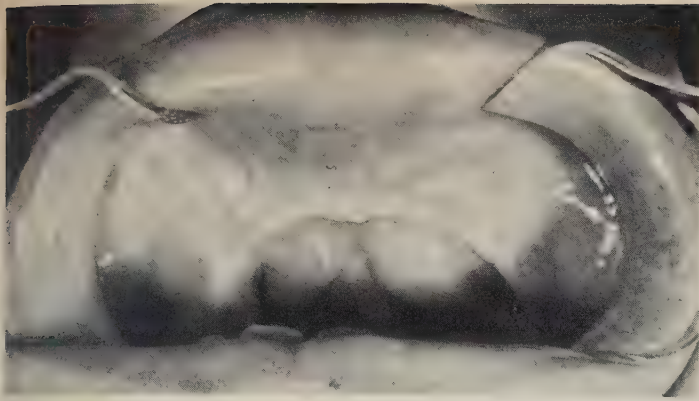


Fig 11 Case 2: the alveolar ridge 12 months after excision of the mandibular symphysis and immediate restoration with a particulate bone graft.

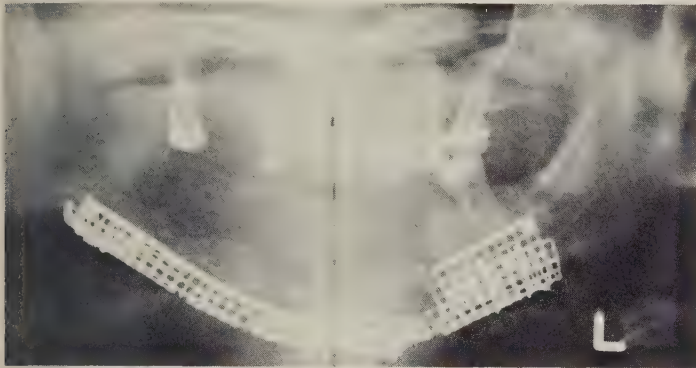


Fig 12 Case 2: panoramic radiograph shows the extent of the metal mesh required in bone chip grafts.

horizontal mattress sutures. The patient received tetracycline for the next two weeks. Intermaxillary fixation was applied for six weeks. There was no postoperative infection despite the intra-oral procedure. Her recovery was normal. After two years her mastication and speech were normal and the cosmetic result excellent (Fig 15, 16).

Discussion and conclusions

Immediate reconstruction following jaw resection has several advantages for the patient and surgeon. For the patient, deformity can be kept to a minimum and normal or nearly normal functional results can be achieved. These objectives are difficult to accomplish when reconstruction is delayed. The procedure is much simpler for the surgeon when the reconstruction is carried out at the time of the resection.

The three cases presented were selected to demonstrate that these objectives can be achieved by using a variety of techniques. In the first case the radical nature of the excision made it difficult to obtain a proper, water-tight closure in the mouth. Because of this, the Steinmann pin, with its small diameter, was used to obtain an acceptable facial contour and fixation of the bone stumps. In the other two patients the extent of the soft tissue excision was negligible, so that closure was not a

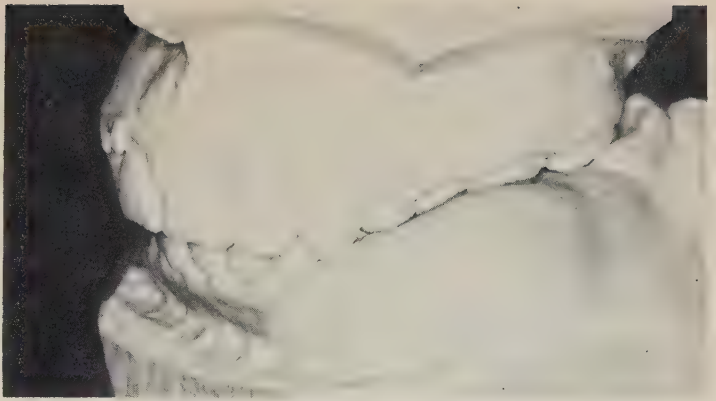


Fig 13 Case 3: plaster casts show the dimensions of the mandibular bony deformity. The lower teeth are covered by the growth.



Fig 14 Case 3: excellent exposure was obtained by an intra-oral approach. The arrow indicates the proximal bone cut near the retromolar region. The presence of the upper incisors helps to orientate the photograph.

problem. Therefore, reconstruction with autogenous bone grafts was selected as the method of choice.

The second case demonstrates several points. The use of extensive autogenous bone block grafts from the crest of the ilium leaves the patient with some residual discomfort and functional incapacity at the donor site. This can pose a problem if repeated bone grafts are required. The use of particulate bone grafts requires the removal of considerably less cortical bone, since the graft is obtained from the cancellous bone surrounding the marrow of the ilium. This results in less deformity of the hip and also permits the use of repeated grafts if this should be necessary. Other advantages claimed for this technique are a faster healing rate as compared to other types of bone grafts and the great osteogenic potential of cancellous bone. The disadvantage of the procedure is that it requires the use of a fairly large metal mesh.¹⁸

The intra-oral approach in the resection of the mandible is cosmetically superior because of the elimination of cutaneous scars. The risk of postoperative infection seems to be no higher when using this route provided closure of the wound is meticulous and antibiotic coverage is used. While infection has been a traditional contraindication for immediate bone grafting, observations by



Fig 15 Case 3: clinical result following an intra-oral segmental resection of the left mandible. Note symmetry and contour of the jaw and the lack of a cutaneous scar.



Fig 16 Case 3: panoramic radiograph taken two years after the operation.

Obwegeser and others indicate that this need not be so.

Where applicable, autogenous bone grafts, particularly from the crest of the ilium, are superior to other tissues or materials used in mandibular reconstruction. But the ultimate selection of a technique will vary with the age and health of the patient, the extent of the resection, the condition of the graft bed and the surgical approach that is to be used. Where the excision of soft tissues is extensive the simplest form of reconstruction is indicated. If the resection is limited to bone and if soft tissue closure is not a problem the use of autogenous bone grafts is advantageous. One piece block grafts may be inserted either by the extra-oral or intra-oral approach. But the use of cancellous bone and marrow grafts usually dictates an extra-oral procedure for fear of contaminating the metal prosthesis that this method requires.

Summary

A brief review is made of the materials and methods available for immediate jaw reconstruction following segmental resection. Three cases are presented to illustrate the results.

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1. Suomi, J.D. et. al.: J. Peridont. 42:152-160, March, 1971.

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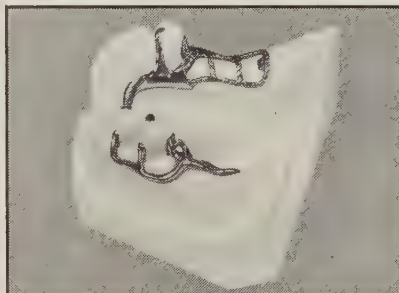
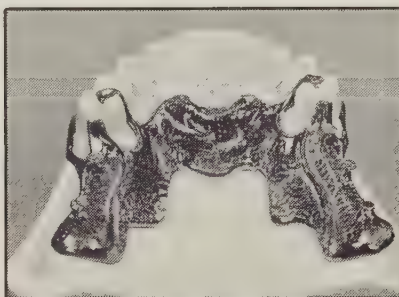
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Reviews/Analyse

Book Reviews

Atlas of Diseases of the Oral Mucosa

J. J. Pindborg. Ed 2. Copenhagen, Munksgaard, 1973. 283 p. Illus. D. Kr. 275

This enlarged second edition includes descriptions of 49 more diseases of the oral mucosa than the first edition.

The purpose of this book is to provide descriptions by colour plates and by words which will assist the dentist or physician to achieve diagnosis. Causes are usually mentioned briefly and treatment methods are not described. As is stated in the author's introduction, "The main emphasis has been placed on clinical diagnostic aspects of the diseases; the histopathology has been dealt with only when necessary for the understanding of a given disease".

The format is simple and highly efficient. When the book is open each page on the right displays two excellent colour illustrations and the facing page, on the left, provides concise word descriptions for the illustrations.

The following list of the main divisions of the contents reveals the comprehensive coverage of diseases of the oral mucosa:

- Infective and Parasitic diseases
- Neoplasms
- Endocrine, Nutritional and Metabolic diseases
- Diseases of the Blood and Blood-Forming Organs
- Diseases of the Nervous System

- Diseases of the Circulatory System
- Diseases of the Respiratory System
- Diseases of the Digestive System
- Complications of Pregnancy, Childbirth and the Puerperium
- Diseases of the Skin and Subcutaneous System
- Diseases of the Musculoskeletal System and Connective Tissue
- Congenital Anomalies
- Symptoms and Ill Defined Conditions
- Accidents and Violence.

This book serves its purpose admirably. It will be valuable to all dentists and physicians who have the problem of diagnosing abnormalities of the oral mucosa. It is likely, because of his vast experience on this field, that Dr. Posselt could write a companion text on treatment of diseases of the oral mucosa and this would constitute another valuable contribution to the science and practice of oral medicine.

C.H.M. Williams

Technique and Treatment with Light-Wire Edgewise Appliances

J.R. Jarabak and J.A. Fizzell. Ed 2. Vol. I and II. St. Louis, The C.V. Mosby Company, 1972. 1244 p. Illus. \$94.00

The second edition contains some of the basic concepts described in the first edition. However, it has been greatly expanded, especially in the number of clinical cases presented, and has been almost completely revised. These volumes are divided by subject matter into two parts. The first seven chapters deal with theory and the remaining seven are devoted to practice. Chapter 1 deals with the basic concepts of analytical mechanics, and Chapter 2 covers the strength of materials. Only elementary concepts are dealt with in the first two chapters but these concepts are expanded later in the book. Chapter 3 outlines the applications of mechanics to orthodontic force systems and the material presented has great clinical value.

The fourth chapter, written and illustrated by Dr. G.V. Carter, des-

cribes wire bending exercises. This has been completely revised from the first edition and is well illustrated. Diagnostic aids are covered in Chapter 5, and Chapter 6 describes diagnosis, case analysis and treatment planning. Here the authors describe a skeletodental system of analyzing a cephalogram in which the growth of the craniofacial complex is projected in either a clockwise or a counterclockwise direction. Depending on the arrangement of the skeletal components, growth in some will cause a posterior facial rotation called the "clockwise group", and in other growth will cause an anterior rotation of the face and these are called the "counterclockwise group." Chapter 7 presents the biophysical considerations of orthodontic forces and has been completely rewritten in keeping with the latest research in this field.

Practice which is the second part of the subject matter has been divided into seven chapters by the authors. Appliance design and the application of helical loop forces is discussed in Chapter 8. The clinical application of the basic loop designs described in Chapter 4 is reviewed. Chapters 9, 10, 11 and 12 describe treatment of (Angle) Class I, Class II, Class III, and unusual malocclusions where a great variety of well documented and illustrated cases are presented. Post-retention records have been added to some of the cases described in the first edition.

Retention is discussed in Chapter 13 and the construction of rubber finishing appliances is described in detail. Chapter 14 was written by Dr. Ronald Roth on gnathologic concepts and orthodontic treatment goals. In this very important chapter, Dr. Roth presents concepts on the relationship that exists between gnathology and orthodontics, and is indeed an extremely valuable addition to these texts.

All the subject matter in these texts is comprehensively illustrated with photographs and diagrams, and most chapters are followed by a list of references and suggested readings. These volumes are well presented and are highly recommended for clinical orthodontists, teachers and students on a graduate level.

Michael Pawliuk

Edgewise Orthodontics

R.C. Thurow. Ed 3. St. Louis, The C.V. Mosby Company, 1972. 336 p. Illus. \$30.45

Dr. Thurow has outdone himself in writing this third edition of "Edgewise Orthodontics".

In these days of simplified "how to do it" texts, Dr. Thurow is a man who digs really deeply into basics. Like the edgewise techniques originator, Dr. E.H. Angle, he is a true biomechanical engineer. Indeed, one chapter in the book is titled "Engineering for Orthodontists;" — and in his text, the first part deals in a wealth of detail with the mechanics of orthodontics. It is interesting to recall too, that the late Dr. Joseph Johnson of Louisville, originator of the twin arch technique, originally entered university in engineering.

However, Dr. Thurow's biological understanding comes to the fore in following chapters; and again his true scholarship is demonstrated in a wealth of detail, along with excellent and numerous illustrations.

This is one of the better texts dealing with the smaller-bracket, lighter-archwire, edgewise philosophy: which is currently gaining favour in post-graduate schools. When Angle originated this edgewise mechanism in the 1920s, he did not have all the modern advances in metallurgy — especially stainless steel — that we have to-day. One wonders, when hearing complaints from to-day's patients, such as, "the pressure hurts", how youngsters in Angle's day felt!

Another innovation developed in the 1960s is the moulded elastic bracket ligature; replacing stainless steel wire ligatures in many cases. Often they can do double duty, when linked in units of space closure as well as bracket ligation. This is only lightly touched on; and the potential here is much greater than Dr. Thurow seems to indicate.

Archwire loops are dealt with in great detail, with excellent photos and illustrations. Clearly, Dr. Begg's eight wire technique is expanding into other philosophies.

While the text deals chiefly with the edgewise technique, perhaps more attention could have been given to

case management in the clinical phase. Overbite and open-bite, for example, are very sketchily covered — the latter not at all.

In conclusion, Dr. Thurow gives much credit to his University of Illinois training under Brodie and Downs: and of course, the final accolade to the great Dr. Angle. After all, 45 years since its introduction, his technique is still probably the one most widely used to-day. In the years I have been examining American Board of Orthodontics case reports at American Association of Orthodontists' meetings, I have seen far more done by edgewise than any other technique. Indeed, last year a clear majority were completed by edgewise. Need more be said?

W.O. Mulligan

Additions to the Library

BIRCH, R.H. and HUGGINS D.G. Practical paedodontics. Edinburgh, Livingstone, 1973. 251 p. Illus. \$14.50.

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WUEHRMANN, A.H. and MANSON-HING, L.R. Dental radiology. Ed 3. St. Louis, Mosby, 1973. 466 p. Illus. \$20.50.

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NOVA SCOTIA — Halifax. Illness makes a very busy general practice available, immediately. Office consists of a newly decorated waiting room, two operating rooms, a large resting room and x-ray. Situated across from Dalhousie University in an attractive residential area. Reply CDA Box No. 1325.

ONTARIO — Hamilton. For sale, busy general practice, established 1965. 600 square feet. Lease for 2 years, five years option at same rent. Waiting room, general office, private office with separate entrance, dark room, laboratory, two operatories — one incomplete. Owner moving because of family commitments. Reply CDA Box No. 1298.

ONTARIO — Hamilton. Dentist's office for rent — reasonable low overhead. Rent \$125.00 monthly including equipment. Write or phone Dr. T. Siegel, 546 Barton St. E., Hamilton, Ontario, 529-1221.

ONTARIO — Ottawa. Dental suite for rent. 700 square feet, 21' x 34" Air-conditioned, reasonable rent, already 3 dentists located in small 4-office building situated in Ottawa South. Apply Dr. G. Bertrand, 1207 Evans Blvd. Ottawa, Ont. K1H 7T6 or call 731-5700 (area code 613).

ONTARIO — Excellent opportunity. Purchase established dental practice, or enter into an association in South Western Ontario city of 30,000. Present dentist returning to graduate school. Reply CDA Box No. 1279.

ONTARIO — West End Toronto. Fully equipped and furnished dental office for rent in a modern medical clinic building; consisting of four operatories, nurse/receptionist station, private office and large waiting room. Central unit for gas analgesia fitted. Building fully air-conditioned, janitorial services provided, ample parking. Reply CDA Box No. 1227.

ONTARIO — Burlington. General practice, fully equipped for intravenous and inhalation anaesthesia. Set up for left-handed operator, office includes two fully equipped operatories and a potential third. For more information please contact Dr. J.J. Corrigan, 761 Brant St., Burlington, Ontario. 1-416-634-8039.

ONTARIO — Toronto. For sale immediately. Thriving practice in desirable west end Toronto location. Two operatories are equipped. Reasonable overhead. Unlimited potential. Phone 233-9301, daytime. 244-9413, evenings.

QUEBEC — Lachine. Suitable for orthodontist, 2nd office; or general practice for sale. Fully equipped, Ritter-G unit; price and rent very reasonable. Dentist retiring from practice. Reply: 8 — 45th Avenue, Suite 10, Lachine. Tel: 637-0473 (office) or 488-4061 (residence).

QUEBEC — Montréal. Centre-Ville, cabinet dentaire disponible, pour Pédiodontiste, Orthodontiste, Omni-praticien, avec un groupe de dentistes. Tél: (514) 849-7774.

QUEBEC — Montreal. Fully equipped office with two chairs available for one full-time or several part-time dentists at a medical centre in Montreal suburb. Potential referrals by 24 medical specialists. Very favourable conditions. For information, write to: Monique Stachewitsch, R.N., directrice, Ville St. Pierre Medical Centre, 45 — 2nd Ave., Ville St. Pierre, P.Q. or phone 514-481-5050.

QUEBEC — Montreal. To sublet — dental office located on first floor of Drummond Building, corner of Peel & St. Catherine St., Montreal. Consists of two operating rooms, business offices, waiting room, rest room and dental laboratory. One office fully equipped including Ritter x-ray and Ritter Unit, also records of fifty years of practice. Can be had from January 1, 1974. If interested, please call in the evening: 738-3465. Very reasonable rental.

QUEBEC — Montreal. Suburb. \$80,000.00 practice established 12 years ago. Three operatories completely equipped. 2 x-rays, private office, lab, storage facilities, etc. Situated in a waterfront apartment building with free marina for tenants. Practice limited to prevention, operative dentistry and prosthodontics. For sale at price of inventory. Write: P.O. Box 2145, Dorval postal branch, Dorval, P.Q. or phone: 514-631-4154.



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ALBERTA — Grande Prairie. City of 15,000, 275 miles northwest of Edmonton. Serve area of 50,000 with new pulp mill just opened. Excellent hunting, fishing, educational and recreational facilities. Practice of 11 years in association with another dentist who is remaining. Completely equipped. Three operatories, lab, private office and business area. Share waiting room and hygienist. Can be leased or bought. Very reasonable. Reply CDA Box No. 1326.

ONTARIO — Pickering. Fully-equipped dental office with two completely new Midwest operatories. New building with broadloom, air-conditioning and parking. Available immediately and located on Harwood Road in Pickering. Please reply to Dr. James T. Hing, Toronto, 259-6597.

ASSOCIATESHIPS WANTED

MANITOBA — Winnipeg. Full-time associateship desired in Winnipeg area. 1972 graduate, age 27, married. One year clinical experience in intravenous analgesia. Available mid-November 1973. Please reply: Dr. J. Kelly, 831 Crescent Drive, Dearborn, Michigan. 48124.

ASSOCIATESHIPS AVAILABLE

ALBERTA — Peace River. High volume, high income practice requires one-two associates. Large new office, six operatories, located in the modern growing town of Peace River. Population 6,000, drawing area of 60,000, two dentists. Tremendous community spirit, all services, recreational facilities, excellent hunting. Ideal for recent graduate wishing an instant, productive, rewarding quality practice with no financial outlay or experienced dentists wishing a more rewarding practice and mode of living. Contact Dr. G.R. (Bob) Sandercock, Box 1798, Peace River. Phone: 624-1646.

BRITISH COLUMBIA — Vancouver. Associate required to join a developing practise in North Vancouver, B.C. Office of ultra-modern design with full facilities for two dentists and hygienist. Partnership opportunity available. Reply CDA Box No. 1313.

BRITISH COLUMBIA — Richmond. Well established general practice requires associate in a rapidly expanding suburb of Vancouver and presently in the process of adding four more operating spaces. If personality and views are in accord, the associateship could develop into a future combined expansion program or partnership. Reply CDA Box No. 1327.

BRITISH COLUMBIA — Squamish. Associate dentist needed for busy general practice. Hygienist present part-time presently. Clinic equipped with inhalation analgesia. Near Vancouver, many recreational areas available. Reply CDA Box No. 1328.

BRITISH COLUMBIA — Vancouver. Opportunity for associate dentist in established busy associate practice in growing area of Richmond. Prevention oriented practice. Beginning October 1, 1973. Experienced dentist preferred. Reply: Dr. Terry Kline, 396 Francis Road, Richmond, B.C.

ONTARIO — Ottawa. South. Associate desired for general practice. Completely renovated office. Opportunity available immediately. Reply CDA Box No. 1237.

ONTARIO — Toronto. Oral Surgeon to join group oral surgery in Toronto. Association leading to partnership. Starting salary minimum \$30,000. Apply: Secretary, Oral Surgery, 168 Eglinton Ave. West, Toronto, Ont. M4R 1A7.

ONTARIO — Toronto. Associate with view to partnership wanted for busy Metropolitan Toronto. Periodontics practice. Starting time flexible. Reply CDA Box No. 1318.

ONTARIO — London. Either young graduate or experienced dentist. We offer one office, with 4 operatories. Potential of having own equipment (choice). Arrangements open re: time, financing, type of practice. State experience, interest, any pertinent information. Reply CDA Box No. 1329.

OPPORTUNITIES AVAILABLE

AUSTRALIA — Tasmania. Orthodontist. Assistantship leading to quick partnership. Various other options are available. Various techniques in use, but basically Begg technique for the full banded cases. Climate temperate, outdoor pursuits unequalled. Reply CDA Box No. 1330.

BRITISH COLUMBIA — Richmond. Excellent opportunity to enter expanding family practice in rapidly growing suburb of Vancouver. Young, experienced dentist preferred. Intention is to share my practice with the right individual. Serious inquiries only. Reply CDA Box No. 1311.

BRITISH COLUMBIA — Kitimat. Prime fishing and hunting country, requires a dentist. Air-conditioned space available in an excellent location. Reply CDA Box No. 1331.

ONTARIO — Cannington. Dental Surgeon required immediately for Cannington Medical Centre. This is a new medical building for 2 general practitioners, dentist, situated in Cannington Village (population 1,400) 70 miles northeast of Toronto in prosperous, well-populated mainly farming area which is developing rapidly. Vast scope. Apply: Box 310, Cannington, Ontario. Tel: 705-432-2569.

ONTARIO — Public Health Dentist. To replace retiring Director of Educational-Preventive Dental Programs for elementary school populations in four Northern Ontario Health Units. Requirements: Ontario license and diploma or degree in dental public health. To reside in Sudbury. Salary open and competitive. Comprehensive fringe benefits. Submit resume and application to: Dr. J.B. Cook, M.O.H., Sudbury District Health Unit, 1300 Paris Crescent, Sudbury, Ontario.

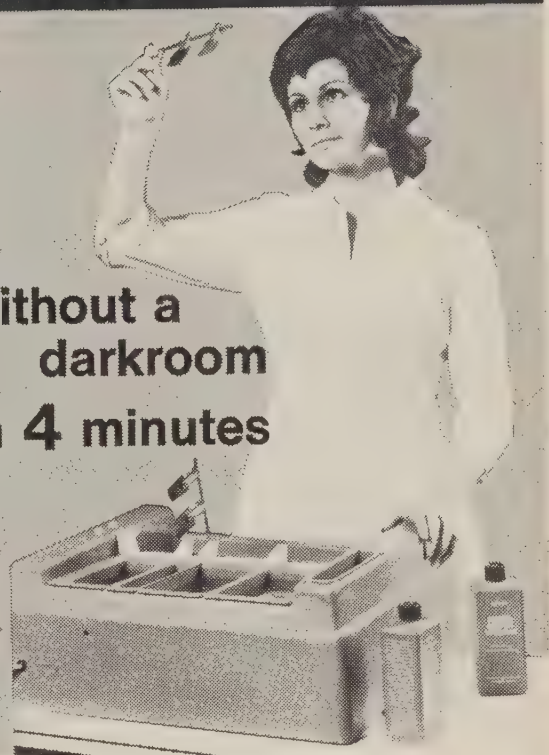
ONTARIO — Family dentist urgently required, serving population of 5000. 27 miles east of Kingston, Thousand Islands district. Modern medical centre available June 15. Area declared underserved by Department of Health. Incentive grant available. Farming, industrial, tourist area with excellent educational and recreational facilities. Write: St. Lawrence District Medical Centre, Box 102, Lansdowne, Ont.



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ONTARIO — Willowdale. Oral surgeon wanted to rent a completely equipped 2-op dental office in the mornings. All services and staff provided. High density area. Recovery room facilities possible. Reply CDA Box No. 1332.

ONTARIO — Ottawa. Experienced Dental Ceramist and Dental Technicians required for new well-equipped crown and bridge laboratory opening in January 1974 in Ottawa. Excellent salaries, working conditions and prospects. Write details of age, education, technical abilities. Photo. 17 Meadowbank Drive, Ottawa, Ont. K2G 0P1.

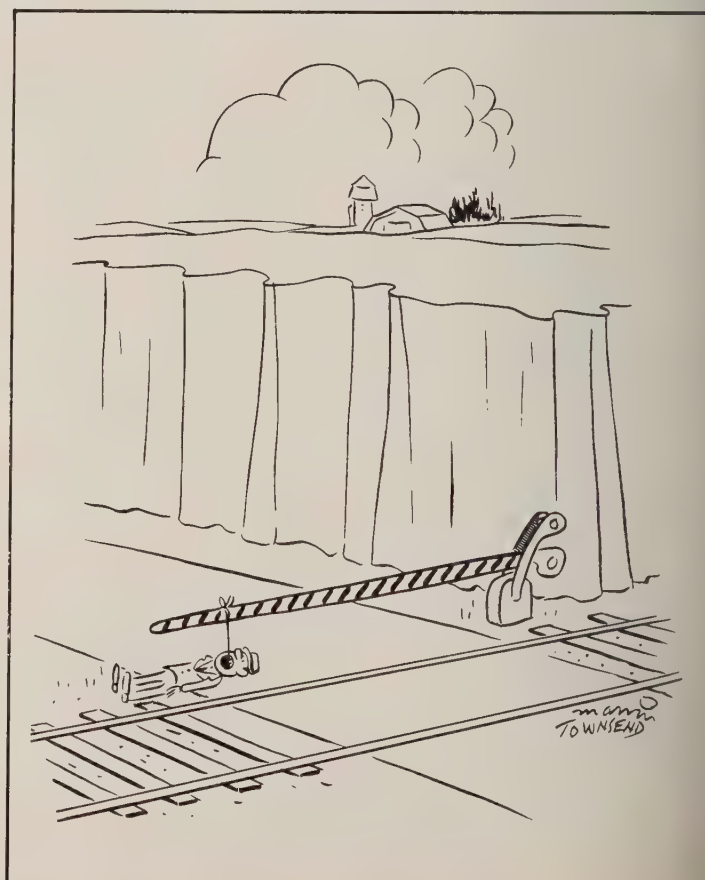
ONTARIO — Toronto. George Brown College of Applied Arts and Technology requires a dentist. As Director of Dental Programs, the dentist will co-ordinate and direct the operation and continuing development of existing programs, ie: dental technician, dental assistant and denture therapist; will develop new programs including extension and short courses; will maintain liaison with the dental profession and with the Community served by the College. This is a full-time position. For further information contact: Director of Personnel, George Brown College, P.O. Box 1015, Postal Station 'B', Toronto 2B, Ontario.

ONTARIO — Toronto. Head of Department of Dentistry, Mount Sinai Hospital, Toronto. Mount Sinai Hospital, one of the teaching hospitals of the University of Toronto, is about to move into a new 650 bed facility. Applications are invited for the position of Head of the Department of Dentistry from persons with experience in hospital dentistry in the area of oral medicine. The appointment carries with it an appropriate University position. Applications should be sent to the Chairman of the Search Committee, Executive Offices, Mount Sinai Hospital, 550 University Avenue, Toronto, Ontario, M5G 1X5.

OPPORTUNITIES WANTED

BRITISH COLUMBIA — Vancouver. Recent graduate currently working in Vancouver, wishes to purchase dental practice from retiring dentist in Vancouver or Greater Vancouver area. Reply Box 35537, Postal Station E, 2021 West 42nd Ave., Vancouver 13, B.C.

QUEBEC — Dentist, perfectly bilingual (ex-clinical instructor) seeks part-time position with busy dentist or replacement for sick or vacationing dentist. Reply CDA Box No. 1333.



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Normal home usage—children—J.A.D.A. 64:216, 1962

Normal home usage—children—J.A.D.A. 72:408, 1966

Normal home usage—children—J. Canad. Dent. Assn. 36:262, 1970

Normal home usage—children—J. Dent. Child. 37:501, 1970

Normal home usage—children—J. Canad. Dent. Assn. 38:35, 1972

Normal home usage—children—J. Canad. Dent. Assn. 38:155, 1972

Fluoridated water—children—J. Dent. Child. 38:211, 1971

Supervised brushing—children—J.A.D.A. 58:42, 1959

Supervised brushing—children—J.A.D.A. 64:217, 1962

Supervised brushing—children—J.A.D.A. 65:482, 1962

SnF₂ topical—children—J. Dent. Child. 28:5, 1961

SnF₂ topical and prophylaxis—children—J.A.D.A. 70:914, 1965

SnF₂ topical and prophylaxis—children—J.A.D.A. 72:392, 1966

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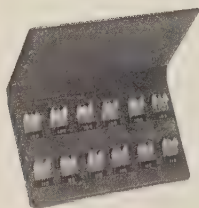
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JOURNAL

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Nov 1973/Volume 39/No 11

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1. Wiesenbaugh, J.M., Jr. (Mar., 1971). 31(3):302.

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Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1974 Windsor, Ont. Oct 2-5

1975 St. John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1974 London, England, Sept 8-14

1975 Chicago, USA, Oct 26-30

Royal College of Dentists of Canada

Part I examinations (Basic Sciences)
June 24, 1974. Applications and \$100 fee must be received before Mar 31, 1974.

Part II Examinations (Oral) Dec. 6-7, 1974. Eligibility is based on successful completion of the Part I Examinations, plus submission of required case histories, and the lapse of five years since the candidate began his graduate training. Written intent to sit this examination with \$100 examination fee must be received before Mar 31, 1974.

Application forms for the Part I Examinations and further information may be obtained from J. E. Speck, Secretary-Registrar-Treasurer, Suite 614, 170 St. George St, Toronto, Ont. M5R 2M8.

Canadian Meetings

The Association of Canadian Faculties of Dentistry/L'Association des Facultés Dentaires du Canada, in Edmonton, Alberta. Nov 21-22, 1973. Dr. G.W. Myers, 3036 Dentistry/Pharmacy Centre, University of Alberta, Edmonton, Alberta T6G 2H7.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov 29, 1973. Mrs. W. C. Durham, 230 St. George St, Toronto 180, Ont. (Accredited by Academy of General Dentistry).

Vancouver & District Dental Society, at Hotel Vancouver, Vancouver. Dec 7-8, 1973. Vancouver & District Dental Society, Suite 325, 925 W Georgia St, Vancouver 1, B.C.

Manitoba Dental Association, at Red Oak Inn, Brandon, Man. Jan 18-19, 1974. G.M. Nowazek, 308 Kennedy St., Winnipeg, Man. R3B 2M6.

Winter Medical-Dental Assembly, at Mont Gabriel, Que. Mar 2-9, 1974. A.T. Wachna, 504 Medical Arts Bldg, Windsor 14, Ont.

College of Dental Surgeons of Saskatchewan, at Moose Jaw. Apr 25-27, 1974. R.G. Tessier, 310 Hammond Bldg, Moose Jaw, Sask.

Les Journées Dentaire du Québec, à l'Hôtel Reine-Elizabeth, Montréal. 1-3 mai 1974. Mme. Françoise Ouimet, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at The Queen Elizabeth Hotel, Montreal. May 1-3, 1974. Mrs. Françoise Ouimet 4290 Beaubien St E, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Hyatt Regency, Vancouver. May 1-4, 1974. K.L. Croft, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Ontario Chapter, Canadian Society of Dentistry for Children, at Four Seasons-Sheraton Hotel, Toronto. May 12, 1974. A.F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

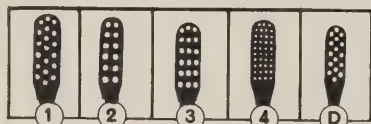
Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May

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12-15, 1974. Mrs. W.C. Durham, 230 St. George St, Toronto, Ont M5R 2P1.

Canadian Congress of Dentistry for Children, at Sheraton-Four Seasons Hotel, Toronto, May 17-18, 1974. J. Bradey, 320 Eramosa Rd, Guelph, Ont.

Alberta Dental Association, at Palliser Hotel, Calgary. May 30-31, 1974. J.R. Duncan, 306, 1711-4th St. S.W., Calgary, Alta.

Sixth International Conference on Oral Biology, at Toronto, June 3-5, 1974. G.S. Beagrie, Faculty of Dentistry, 124 Edward St., Toronto, Ont. M5G 1G6.

Canadian Public Health Association, at the Arts and Culture Centre, St. John's, Nfld. June 17-20, 1974. CPHA, 1255 Yonge St, Toronto, Ont. M4T 1W6.

The Association of Canadian Faculties of Dentistry/L'Association des Facultés Dentaires du Canada, at Digby Pines, Digby, Nova Scotia. June 20-21, 1974. Dr. G.W. Myers, 3036 Dentistry/Pharmacy Centre, University of Alberta, Edmonton, Alberta, T6G 2H7.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R.C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Society of Oral Surgeons, at Toronto. Sept 28-Oct 1, 1974. H. Phillips, 99 Avenue Rd. Ste 810, Toronto, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J.J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor Ont. Oct 2-5, 1974. J.M. Conchie, 14265 - 56th Ave, Surrey, B.C.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 26-27, 1974. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, P.Q.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 28-30, 1974. Miss M. Komarnicka,

4166 St. Catherine St W, Montreal 215, P.Q.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

Academy of Dentistry, at Royal York Hotel, Toronto, Nov 28, 1974. Mrs. P. Williams, 230 St George St, Toronto, Ont M5R 2P1.

Les Journées Dentaires du Québec, à l'Hôtel Bonaventure, Montréal. 30 avril-2 mai 1975. M. de Bastien, 4290 est rue Beaubien, Montréal 409, Qué.

Quebec Dental Surgeons Association, at Bonaventure Hotel, Montreal. Apr 30-May 2, 1975. Mr. de Bastien, 4290 Beaubien St E, Montreal 409, Que.

Canadian Academy of Paedodontics/Canadian Congress of Dentistry for Children, at Four Seasons-Sheraton, Toronto, May 17-18, 1975. J. Duncan, 155 James St. S, Suite 130, Hamilton 10, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 18-21, 1975. Mrs. W.C. Durham, 230 St. George St, Toronto, Ont, M5R 2P1.

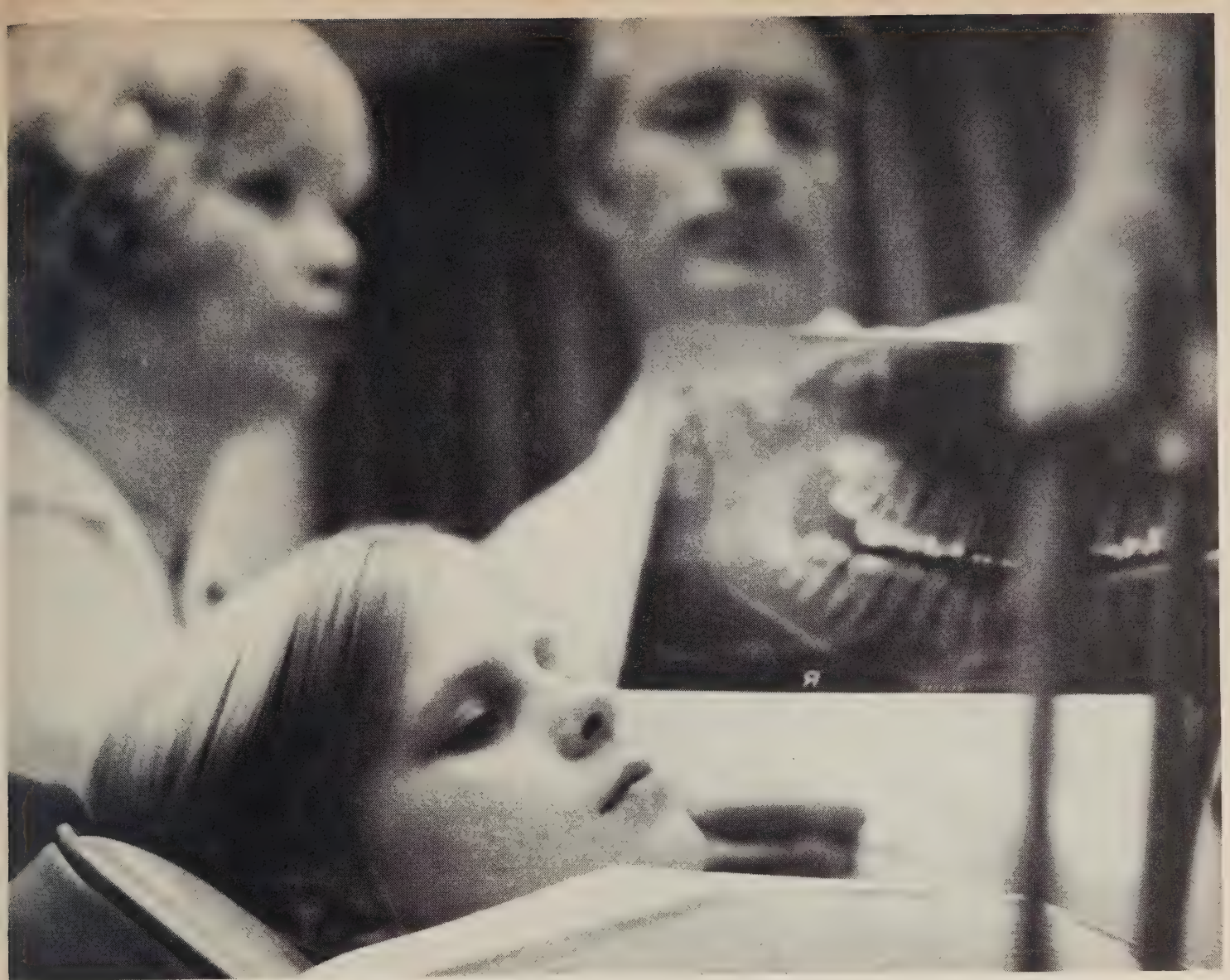
College of Dental Surgeons of Saskatchewan, at Saskatoon. June 11-14, 1975. E. Freidin, 507-105-21 St. E, Saskatoon, Sask.

International Meetings

Association Dentaire Française, à Parc des Expositions, Porte de Versailles, Paris. 14-18 nov 1973. Jacques Charon, 22 avenue de Villiers, 75-Paris 17ème, France.

American Institute of Oral Biology, at Spa Hotel, Palm Springs, Calif. Nov 16-20, 1973. Membership Chairman, P.O. Box 897, Glendora, Calif 91740, USA.

International Implantary Course of Dental Surgery and Prosthetics, Paris, Nov 26-29, 1973. 144 rue Marcadet 75017 - Paris, France.



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Letters/Courier

Dental auxiliaries

At the risk of being accused of resisting progress, I would like to make some comments about the "Viewpoint" article published in the September issue.

It would seem that we are in error in assuming that the mass use of auxiliaries will produce cheaper dentistry. The cost of renting space and providing equipment and supplies is the same. The only reduction would occur in the saving between the dentist's take-home pay and that of the auxiliary. This would not be enough to reduce fees very much, at least in my experience.

For some reason, the dentist is supposed to carry the ball in fee reduction. It would seem to me that the supply houses and dental labs should also become humanitarian in their outlook. They have no one to answer to when they escalate their prices.

The only way mass use of auxiliaries could work would be to have the government take care of operating clinics. Then, no one would know or care how much the delivery system would cost. Dentists in private practice have a different outlook from those who are on salary.

There is no single solution to this problem. Those I have observed using an auxiliary system seem to be working harder and making less financially. After all, with increase in responsibility, there should be some financial reward. In society in general, people expect more for doing less. The dentist is considered wrong if he expects a higher reward for increased responsibility.

There are almost as many theories about dental delivery systems as there are practitioners. Perhaps some day we shall each work out our own best way to practise.

R.J. Archibald
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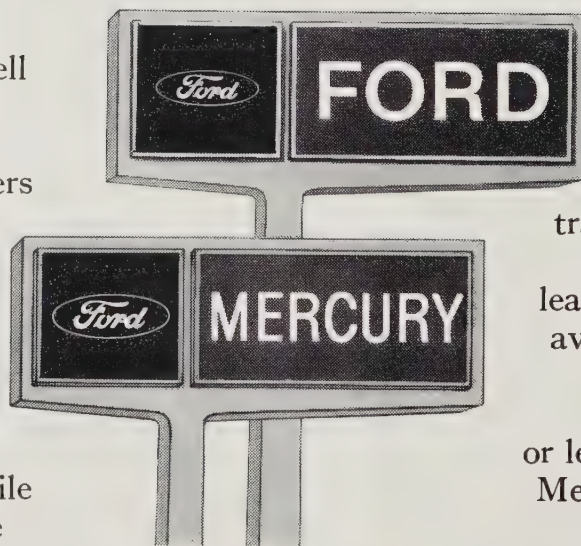
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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

This is the fifth in a series of articles devoted to describing the services provided by the Canadian Dental Association for and on behalf of its members. My thanks are extended to those who are responding to the questions relating to each service. All CDA members are encouraged to voice their opinions.

National Voice for Dentistry

There are many occasions which require the dental profession in Canada to have a national voice and/or presence. A far from complete list of such occasions includes the following:

- An agency of the federal government wishes to confer with a representation of the dentists of Canada.

- Canadian dentists, collectively, want their views conveyed in the most forceful manner practicable to agencies of the federal government. The usual methods of conveyance are: formal, brief, written statements or letters; personal representation by delegations of one or more; or a combination of these methods. Examples of this type of national representation provided by CDA in recent years include:

- 1) a series of briefs, letters and personal representations regarding the Medical Care Act;
- 2) a brief and representations on the White Paper on Taxation;
- 3) a brief and representation regarding the Competition Act;
- 4) a brief to the Senate Committee on Aging;
- 5) a brief and letters regarding unemployment insurance;

- 6) a brief to the Wells' Committee on Dental Auxiliaries;

- 7) numerous presentations regarding sales tax and import duty on dental supplies and equipment;

- 8) several presentations and interviews regarding tax deductibility for continuing education and convention expenses;

- 9) a brief regarding the role of the federal government in dental health for Canadians;

- 10) CDA's Dental Health Plan for Children.

- Invitations from provincial government agencies or from provincial corporate members for the National Association to express its views. Examples of this are:

- 1) CDA's brief to the government of Quebec regarding the Denturologist Act in that province;

- 2) CDA's brief to the Government Advisory Committee in Saskatchewan regarding a Dental Plan for Children in that province.

- Requests from the news media for a national opinion on various issues in the field of dental care.

- Liaison with other national health related associations in Canada.

- Co-operation and interchanges with national dental associations in other countries throughout the world.

- Active participation in the Fédération Dentaire Internationale and, through the Fédération, contacts with organizations such as the World Health Organization and the International Standards Association.

(Continued next page)

EDITORIAL

Innovations in dental practice

Following the theme announced in September, the first of the series of articles in which Canadian dentists have volunteered to describe their way of conducting a practice appears on page 773. Read it with an open mind, then set down your reactions, good or bad, in a letter to the editor so others can benefit from your judgment. If, after reading Dr. Braunig's account, you feel that you, or a confrere, have a development worth writing up, let us hear about it. If you haven't time to write an article the Journal staff can help put your ideas into words after being given the facts, and perhaps a few pictures, to work from.

The important thing is for all Canadian dentists to pool their ideas and come up with an effective alternative to a government or other third party organized dental care distribution system. We believe that private practice has the greatest potential for supplying all the high quality care needed by Canadians at the lowest cost — but it is up to the profession to prove it by doing it.

Dental manpower surveys

Statistics Canada is currently engaged in its survey of highly qualified manpower, which is done every ten years as part of the Canadian Census. We wish to point out that the national and provincial dental associations can obtain access to this material even-

tually for the use of the profession and urge all to cooperate fully.

At the same time, however, there is a great need on the part of CDA and the provincial associations for considerably more detail regarding the economic trends of dental practice. In the past, at five year intervals, the Canadian Dental Association has conducted surveys of dental practice to fill this need. It is now apparent that another approach is needed because the intervals between the surveys were too long and the entire project too expensive. The new plan is considerably streamlined by computer, so that no practitioner will need to fill out a long questionnaire. At the same time, it will allow your associations to have more up-to-date information on hand when needed. In all provinces, as soon as arrangements can be completed, a summary of the biographical information on hand will be enclosed with the annual licence fee notice. All that will be required of an individual will be to scan the print-out and correct any errors or omissions, check answers to half a dozen questions, and then return the form to the provincial licensing board. Each year a few more questions will be asked as needed so that in a five year cycle the entire range of information will be gathered. It is essential that your elected representatives in each province and in the national organization be well equipped with current facts for them to plan effectively. The aim is to have 100 per cent returns in all provinces.

R.M.G.

Executive Director's Page *(from page 745)*

Should dentistry in Canada not have a national stature or voice, there would be no agency to represent its interests with the federal government; dentistry would suffer from lack of consideration by the federal agencies even more than it does now. If a corporate member or a provincial government wanted a national opinion on a given issue, there would be no representative body to turn to.

The absence of a national dental association would also create such complications as the following: requests from the news media for national points of view would go unanswered; opportunities for liaison with other national health associations within or outside of Canada would disappear;

Canadian dentists would no longer be eligible to be supporting members of the FDI and would therefore be denied the privilege of attending the annual World Dental Congress; and, finally, Canadian dentistry would lose its international prestige as a significant contributor to efforts to improve the dental health of the peoples of the world.

Question No. 7

In your view, does Canadian dentistry need a national voice by which to communicate, on behalf of its members, with governments, with other national and international organizations and with the news media?

Additional comments beyond your "yes" or "no" will be most welcome.

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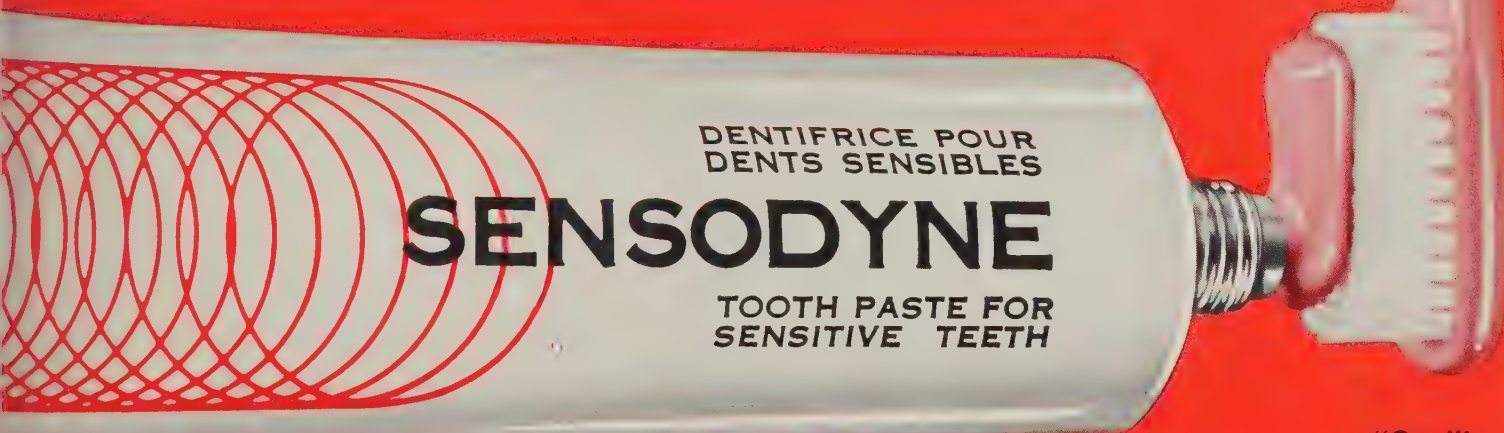
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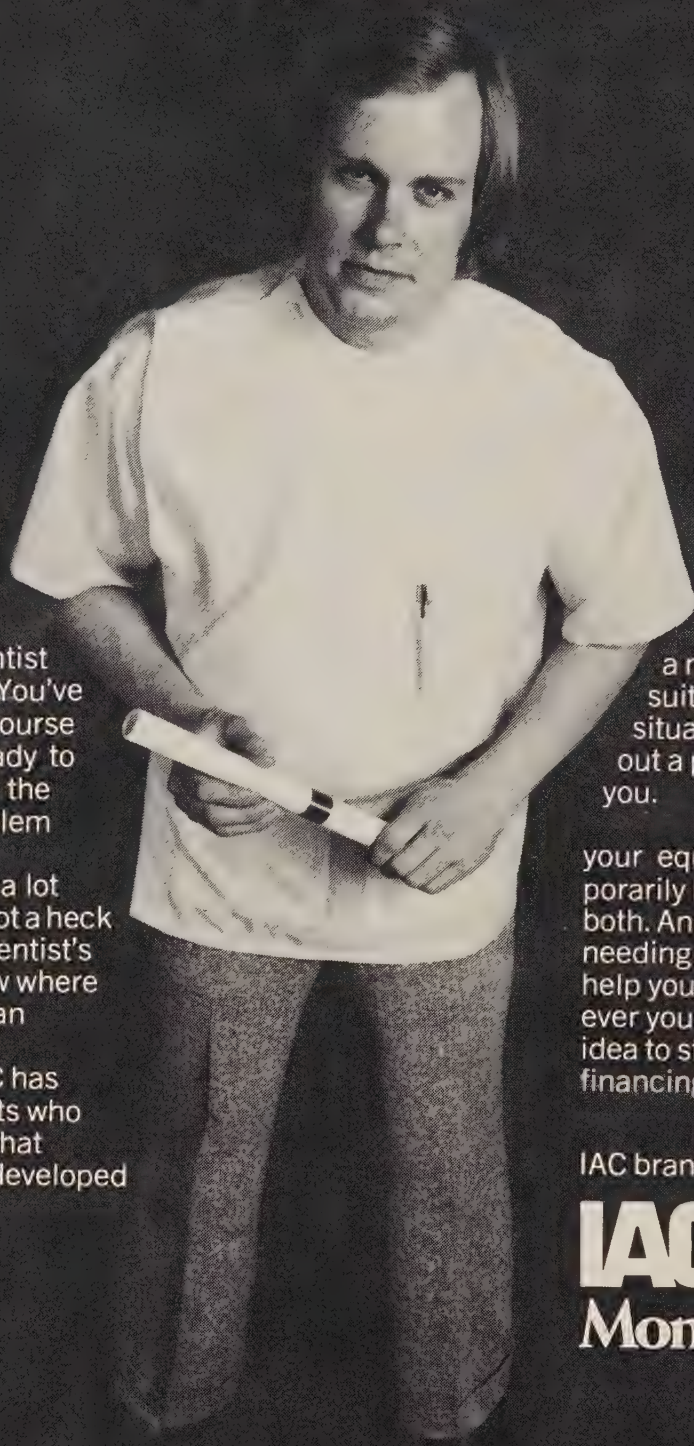
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VIEWPOINT

Peer Review

"Peer review" has become a very popular catch phrase with which the professions are attempting to win public approval and approbation — a phrase to get everyone to like us. It means many things to many people — depending on "whose ox is being gored." The phrase is prated and prattled about with no clear definition and, what is more important, having given the definition, no attempt is made at an interpretation. Perhaps that is why we have lawyers.

Does "peer review" mean "big brother" looking over your shoulder? Does it mean a mass spying of one upon the other so that some dereliction, large or small, will be uncovered? Does it mean a digestion of this huge, unwieldy mass of seemingly unrelated evidence by some committee or some all-powerful figure, who or which will eventually spew forth a penalty for which you, as the lowly offender, will genuflect? Does it mean a turn to the "police state" type of thinking where one is afraid to do anything in case it is wrongly construed?

One wonders if there might not be a relationship between ethics, professionalism, the golden rule, competent guidance and screening, call it what you will, and "peer review." One wonders, assuming all the above factors, if perhaps "peer review" is not the redundant factor; if these factors are not all that is needed to make us a trustworthy profession. One wonders if the phrase is not being bandied about in order to rationalize and cover up a lack of motivation by each member of the profession to be his "brother's keeper", professionally at least. There is a great deal to be said for keeping our own house in order — because we are professional and because of the responsibilities and obligations we have assumed by the very nature of our profession. Perhaps it is time our faculties assumed their rightful position in teaching more than the mechanics and science of dentistry — that ethics, for example, deserves more than a half hour class once a week. Perhaps motivation should be questioned more thoroughly concerning the student's application to the faculty so that he or she might, hopefully, practise dentistry for the rest of his or her life. Perhaps less concern and emphasis should be placed on an A+ academic record.

Despite the above, I firmly believe in the principles of "peer review", at least as I understand it. I believe it should be placed in its proper perspective, used, not as a big whip and operating through fear, to return an erring and straying member to his useful place in the profession. I believe in "peer review" as a means of protecting the public and the profession. We must remember that the aims, objectives and results desired by both the public and the profession are inimical, and that neither can be divorced from the other without serious, deleterious effects.

To me, "peer review" comes into its own when cool, dispassionate complaints are forthcoming against a member, by the public or the profession — when, on due investigation, these complaints are found to be justified, when decisions are made, with the member's full knowledge, which will result in these complaints being rectified, either through the member desisting or through the professional organization taking steps to help in returning that member to full and competent use. Surely he is capable of being returned to the mainstream of the profession. If not, we cast serious doubts on the system which spawned us all.

To me, that is "peer review." Something to be used, when needed. I agree that a competent practitioner need not fear it, but when the mechanics of a system are being set up so that we are all being reviewed, needed or not, then I feel that the implications are insidious and far-reaching. Then I feel, we need all fear it. The possible abuses are without number.

As a postscript — one also wonders who is going to pay for this "inquisition." Do we further increase our fees for the good of the public, cloaked in the goodness of "Peer Review"?

*F.L. Pierce,
P.O. Box 2047
Wetaskiwin, Alberta*

The opinions expressed are those of the author. Readers are invited to submit their own thoughts or comments on important professional issues to the Journal for publication as "Viewpoints." Space limitations force the editor to retain the right to edit or abridge material accepted for publication.

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⁽¹⁾ Wade, A. B.,
British Medical Journal,
Volume III, Number 8,
P. 280-285, 17/10/61.

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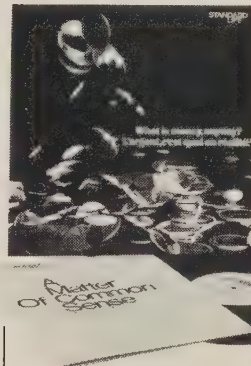
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1. Barkley, Robert F.: Successful Preventive Dental Practices, Macomb, Ill., Preventive Dentistry Press, 1972, p. 211.
2. Goldman, H. M., et al.: Current Therapy in Dentistry, vol. 1, St. Louis, The C. V. Mosby Company, 1964, p. 64. 3. Goldman, H. M., and Cohen, D. W.: Periodontal Therapy, ed. 4, St. Louis, The C. V. Mosby Company, 1968, pp. 319-320.

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The Association



Patricia Lundie

CDA staff appointment

Patricia Lundie of Toronto has been named public information officer for the Canadian Dental Association. In announcing the appointment, Dr. W.G. McIntosh, CDA executive director, explained that Miss Lundie will head up the Association's Bureau of Public Information and will be responsible for external communications with governments, news media and the public.

Miss Lundie has a broad background in the field of public relations. Most recently as a communications officer for the Ontario Ministry of Health, she was responsible for informational activities related to the Ministry's public health division, including projects in the broad field of environmental and local health services and the public health laboratories.

Previous to joining the Ministry of Health, Miss Lundie was Director of Public Relations for the Toronto General Hospital, concerned with both internal staff and external press and public relations. Her extensive industrial and business-related experience also includes public relations and editing with the Canadian Foundation Company and many years in the adver-

tising agency field, dealing particularly with radio and television writing and production.

In addition, Miss Lundie has been associated with a number of voluntary associations and groups including: the Canadian Women's Press Club, the international sorority of Beta Sigma Phi, Calgary Olympic Development Association, Ontario Hospital Association and Corporate Communicators Canada.

Canada and the Provinces

Dentoscope to feature latest concepts in dental equipment and materials

During the month of November the newly formed National Dental Exhibitors will host a display of the latest concepts in dental equipment and materials. More than 35 of the industry's leading manufacturers will be in attendance.

This first exhibition, to be called Dentoscope, is destined to become an annual event. Dentoscope will make its debut in London, Ontario, on November 13 at the Banqueter Hotel and in Toronto on November 16 at the Sheraton Four Seasons Hotel. The exhibitions will run from 6:00 pm to 10:00 pm.

Dentoscope is supported by the following dental dealers: Ash Temple Ltd.; Dental Company of Canada Ltd. (Denco); National Refining Company Ltd.; and United Dental Corporation. Further information may be obtained by contacting the sales representatives of any one of these firms.

New dental association established in Quebec

A new dental association has been established in Quebec, involving a group of dental surgeons who are prepared to participate in a program of dental care for children. The group wishes to make possible the distribution of certain dental services to children, as soon as possible. This will come about through an agreement with the minister of social affairs, M. Claude Castonguay.

Last April, the Association of Dental Surgeons of Quebec, on the recommendation of its negotiating committee, rejected a government offer for such a program. This involved the resignation of the President of the Association. Furthermore, this rejection was made against the recommendation of the Association's technical adviser.

One group of dental surgeons has, however, refused to accept the dictates of the Association, forming a new association under the name of l'Association dentaire du Québec. They wish to start negotiations for implementation of the dental care program for children, which has been promised to the public many times before.

The members of the executive of l'Association dentaire du Québec are: Drs Hubert LaBelle, André LeBlanc, Michel Riedl, Jean-Guy Boily, Maurice Lamoureux, Romuald Sénéchal and Nicole Renaud.

A special invitation is extended to dental surgeons wishing to participate in the dental care program for children. Information may be obtained by writing to Association dentaire du Québec, 666 Sherbrooke St W., Suite 501, Montreal 111, P.Q.

School of Dental Therapy opens in Fort Smith, NWT

The new School of Dental Therapy in Fort Smith, Northwest Territories, marked its official opening on September 21, 1973. The Honourable Mr. Norman Cafik, Member of Parliament for Ontario East and parliamentary secretary for the Minister of National Health and Welfare Marc Lalonde, was

on hand to officiate at the ceremonies. Mr. Cafik complimented Dr. Keith W. Davey, Director of the School, on the excellence of the facilities and the program.

The Fort Smith School of Dental Therapy is a cooperative effort of the Department of National Health and Welfare and the Northwest Territories Commission. It offers a unique program specifically designed to meet

much of the dental needs of the Canadian North.

The two-year program is structured to provide dental therapist training to local residents who, upon graduation, will be expected to return to their communities and, under the general supervision of dentists, carry out the necessary dental care services to the people of their communities. Dentists will visit the various communities at regular intervals to assist the therapists and to provide the direction necessary.

The first class of 10 students is beginning its second year of training and the second class, with 20 students, is now underway.

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Tooth decay reduced with fluoride mouthwash

Vancouver children who took part in a study where they rinsed their mouths once a week with fluoride mouthwash had 27 per cent fewer cavities than a control group who rinsed, but not with fluoride.

Dr. S. J. Gallagher, director of dental health for the Vancouver health department, stated that the fluoride rinses were "definitely successful" in helping to reduce tooth decay.

Results of the study were first announced at the recent annual meeting of the Canadian Public Health Association. The project involved over 900 grade 5 students, many of them from low income areas, and was conducted over a two-year period. The children, under the supervision of teachers, rinsed their mouths with solution once a week for one minute. Dental examinations of the children were made before the study and compared with the follow up examinations two years later.

Dr. Gallagher said the rinsings could be carried out as part of a preventive program to reduce tooth decay even in areas where the water is fluoridated. He explained that the more programs a person is involved in, the better the results, since the effects are cumulative.

The rinsing procedure is perfectly safe, according to Dr. Gallagher. Since the rinse is not swallowed, there is no additional intake of fluoride.



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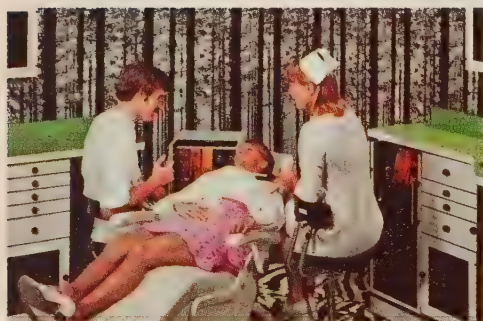
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International Items

Surge of denturists' activities focus of public relations meeting

The surge of activities by so-called denturists in North America was the focus of an intensive review by Canadians and Americans during the Eighth National Conference on Dental Public Relations held Aug. 6-7 at the American Dental Association Headquarters in Chicago.

Ray Argyle, director of public relations for the Ontario Dental Association, was on hand to speak to delegates on the Canadian experience with illegal prosthetic activities. Six of the 10 Canadian provinces have legalized public services by dental laboratory technicians in one way or another.

Mr. Argyle suggested that to prevent denturism in any state the organized profession must take steps early — before a problem develops. These steps should include keeping legislators well informed of the illegal inroads by unqualified and unlicensed personnel, making sure that the legislators understand the health hazards involved.

He also suggested an informed awareness among some of the more influential news media representatives in the area is essential. "If you wait until they're approached by a denturist, you can be sure they'll have been sold a bill of goods; they'll be confused and mixed up, and it will be awfully difficult to straighten them out", he said.

Equally important, according to Mr. Argyle, is to begin educating the public about the complexities of dentures so they will have a better appreciation of the dentist's indispensable role and promote good relationships between dentists and dental laboratories so that when denturists appear on the scene, dental laboratory operators will want to present a united front against them.

He also emphasized the need to provide some mechanism whereby dentures can be made available at

reduced fees to those who cannot otherwise pay for them.

Dr. Kenneth Pownall, registrar-secretary-treasurer of the Royal College of Dental Surgeons of Ontario, presented a chronological review of the progression of denturism in Canada. He repeatedly emphasized that light-weight preparations by the dental profession and an attitude of non-alarm paved the way for the systematic victories by denturists across Canada during the past decade.

"We felt confident that no problem would arise in Ontario and that the so-called denturists' or dental mechanics' movement would soon evaporate. We were naive!" he said.

Dr. Pownall said that the Canadian experience offered five lessons in the field of public relations for dental societies. They need: (1) to develop effective communication between the public and the dental profession, starting at the community level; (2) to establish "advisory committees" to counsel them regarding relationships with the public; (3) to intensify their consultative procedures with all dental auxiliary organizations; (4) to re-assess their responsibility in showing leadership in dental care delivery systems; and (5) to conduct a continuing program of public education with respect to their role and activities.

ADA to study public attitudes and behaviour

Study of the current system of delivery of dental caries prevention will be the first research project of the Division of Behavioral Sciences, newly established within the American Dental Association Research Institute.

The opening of the Institute's new division and the appointment of key staff members have been announced by Dr. C. Gordon Watson, ADA executive director, and Dr. Kirk Hoerman, Director of the Institute.

Dr. Helen G. Newman of Chicago has been named the first director of the Behavioral Sciences Division.

The opening of the division, the sixth within the young ADA Institute, is made possible in large part by a federal research contract awarded in May to study the role of the practising

dentist in methods of caries prevention delivery. The knowledge, belief, attitudes and current actions of practising dentists relative to caries prevention will be studied in an attempt to determine the effectiveness of the dentists, singularly and as a member of professional dental societies, in changing public preventive attitudes and behaviour.

The 18 month research contract is under the National Caries Program of the National Institute of Dental Research. It is intended that these studies will provide guidelines for programs through which the dental profession can more effectively and efficiently implement its responsibility for delivery of preventive dental services.

International Dental Exhibition and Conference in Hamburg 1974

The XIX International Dental Exhibition and Dentists' Conference will be held in Hamburg, Germany, from April 23-28, 1974.

Seminars and conferences will draw experts in many fields of dentistry. The exhibition offers the opportunity for exchange of ideas and familiarization with new developments and professional products for clinic and laboratory.

Further information may be obtained from Mr. L. Kokas, Canadian German Chamber of Industry and Commerce, 480 University Ave, Ste 1510, Toronto 2, Ont.

New Zealand dentists plan 1974 conference

The 1974 Biennial Conference of the New Zealand Dental Association will be held in Auckland, August 26-30, 1974. An invitation is extended to all members of the dental profession to attend this major meeting.

The chosen theme for the Conference is "Advances in Dental Therapeutics." Guest speakers will be Dr. Carl Boucher of Ohio State University School of Dentistry and Dr. Ralph

Phillips of Indiana State University School of Dentistry.

The display area and scientific program will take place on the University of Auckland campus. Accommodation has been booked nearby and social, sporting and sightseeing ventures have been carefully chosen to appeal to a wide interest range among visiting delegates.

Further information may be obtained from N.K. Nicholas, Conference Secretary, NZDA 1974 Biennial Conference, P.O. Box 28084, Remuera, Auckland 5, New Zealand.

Awards and Appointments



S. P. Ramfjord

Gold Medal Award

Sigurd P. Ramfjord of Ann Arbor, Michigan, will receive the Gold Medal Award of the American Academy of Periodontology at the 59th Annual Session of A.A.P., October 24-27, in San Antonio, Texas. At a ceremony on Friday, October 26, Academy President Claude L. Nabers will present the award to Dr. Ramfjord to honor him as a man of dental science who has made outstanding contributions to the understanding and treatment of periodontal diseases.

Originally from Oslo, Norway, where he received his dental degree, Dr. Ramfjord came to the University of Michigan in 1946 to earn his master's and doctor of philosophy degrees. He is presently Professor and Chairman of the Department of Periodontics at Ann Arbor. He possesses an international reputation for research

and for his numerous important contributions to the literature of periodontics and oral pathology.

A past President of the Academy and now a Director of the American Board of Periodontology, Dr. Ramfjord has received many awards, including those from the International Association for Dental Research and the William J. Gies Foundation for the Advancement of Dentistry. As an international spokesman for periodontics, he has achieved recognition also through his efforts to elevate standards of practice and levels of oral health of people throughout the world.

Dr. Harry Belyea accorded honour

Dr. Harry Belyea was recently honoured on his 100th birthday by a testimonial dinner given by the Medical and Dental Societies of Edmonton.

Telegrams were read from Queen Elizabeth II, Prime Minister Trudeau and Premier Hatfield, as well as many friends and relatives. At the dinner, he was presented with an engraved "Paul Revere" bowl from Harvard University.

Dr. Belyea is the oldest living graduate of Harvard, where he received his DMD in 1897. He was the first orthodontic specialist in Edmonton. Chosen to found the Faculty of Dentistry at the University of Alberta, he later became Dean of Dentistry until his retirement in 1942.

Among the many honours Dr. Belyea has received are an LLD from the University of Manitoba in 1960 and an FRCD from McGill University in 1969.

Quebec oral surgeons elect new officers

Dr. Guy Maranda of Quebec City was named president of the Quebec Association of Oral Surgeons during a general meeting held this spring in Montreal. Montreal.

Other officers elected to the association's executive council are: Dr. Eric P. Miller, Montreal, president elect; Dr. Edward Slapcoff, Montreal, treasurer;

and Dr. Gerard deMontigny, Montreal, secretary. Doctors Paul Mercier, Yves Boivin, K.C. Bentley and Claude Madore were named councillors.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on September 30, 1973:

Guaranteed Fund \$10.418

Fixed Income Fund \$13.945

Common Stock Fund \$13.042

Total assets (market value) of the plan were \$16,578,541.40.

The following portfolio purchases and sales occurred during the preceding month: bought 2,500 shares Distillers Corp. Seagrams; 2,000 shares Macmillan-Bloedel; 3,000 shares Royal Bank of Canada; 4,000 shares Trans Canada Pipelines; \$800,000 Aluminum Company of Canada note; \$600,000 Consumers Gas Co. note; and \$500,000 Mercantile Bank of Canada note. Sold 1,900 shares Westburne International; \$1,300,000 Aluminum Company of Canada note; and \$800,000 Aluminum Company of Canada note.

Deaths

Clermont, Charles Cyril. 79. Regina, Sask. Royal College of Dental Surgeons of Ontario, 1920. August 1973. Survived by wife.

Cove-Jones, John. 29. Vancouver, B.C. University of Edinburgh, 1966. 3-9-73. Survived by wife.

Dobbins, Alexander. 71. Vancouver, B.C. North Pacific College of Oregon, 1931. 30-8-73.

Moore, Richard Charles. 67. Toronto, Ont. University of Toronto, 1928. 5-9-73. Survived by Marguerite (wife), and Mrs. Barry Cooke (daughter).

Simmons, Kenneth Francis. 49. Barrie, Ont. University of Toronto, 1951. 2-9-73.

Spink, Roy Gordon. 53. St. Boniface, Man. University of Toronto, 1943. 4-9-73. Survived by Willow (wife); Gordon and Roger (sons); Mrs. June Spencer, Mrs. Joy Janssen, Rena and Laurie (daughters).



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INDICATIONS: Carbocaine (brand of mepivacaine) is indicated for the production of local anesthesia for dental procedures by infiltration injection or nerve block.

CONTRAINDICATIONS: Carbocaine is contraindicated in patients with a known hypersensitivity to the amide type local anesthetics or to methylparaben which is added to the multiple dose vial solutions.

WARNINGS: RESUSCITATIVE EQUIPMENT AND DRUGS SHOULD BE IMMEDIATELY AVAILABLE WHEN ANY LOCAL ANESTHETIC IS USED.

Usage in Pregnancy: Safe use of Carbocaine has not been established with respect to adverse effects on fetal development. Careful consideration should be given to this fact before administration during pregnancy.

Solutions containing a vasoconstrictor, particularly epinephrine or norepinephrine, should be used with extreme caution in patients receiving antidepressants of the triptyline or imipramine types or MAO inhibitors

because a severe prolonged hypertension may occur.

PRECAUTIONS: The safety and effectiveness of Carbocaine depend upon proper dosage, correct technique, adequate precautions, and readiness for emergencies.

The lowest dose that results in effective anesthesia should be used to avoid high plasma levels and serious undesirable systemic side effects. Injection of repeated doses of Carbocaine may cause significant increases in blood levels with each repeated dose due to slow accumulation of the drug or its metabolites, or due to slow metabolic degradation.

Tolerance varies with the status of the patient. Debilitated, elderly patients, acutely ill patients, and children should be given reduced doses commensurate with their age and physical status.

Solutions containing a vasoconstrictor should be used cautiously in the presence of diseases which may adversely affect the patient's cardiovascular system. In persons

with known drug sensitivities or allergies Carbocaine should be used cautiously.

Serious cardiac arrhythmias may occur if preparations containing a vasoconstrictor are employed in patients undergoing or following the administration of chloroform, halothane, cyclopropane, trichloroethylene, or other related anesthetics.

ADVERSE REACTIONS: Adverse reactions result from plasma levels due to excessive dosage, rapid absorption, or inadvertent intravascular injection. Hypersensitivity, idiosyncrasy, or diminished tolerance may also be the cause of reactions. Reactions due to overdosage (high plasma levels) are systemic and involve the central nervous system and the cardiovascular system.

Reactions involving the central nervous system are characterized by excitation and/or depression. Nervousness, dizziness, blurred vision, or tremors may be followed by drowsiness, convulsions, unconsciousness, and possibly respiratory arrest.

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1. Most of today's dental procedures are brief. Patients dislike having their faces numb for hours after they've left the office.

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Carbocaine 3% adds this important dimension to patient comfort because it is fully effective by itself, without any help from a vasoconstrictor.

For longer duration, Carbocaine HCl 2% is combined with Neo-Cobefrin* (brand of levonordefrin) 1:20,000, a vasoconstrictor more stable than epinephrine and less potent in raising blood pressure.

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Carbocaine^{*} HCl 3%
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Conditions involving the cardiovascular system include...
...of the myocardium, hypotension, bradycardia,
...cardiac arrest. Treatment of a patient with toxic
...consists of maintaining an airway and
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...respiration as required. Supportive therapy of
...cardiovascular system consists of using vasopressors,
...ably epinephrine. Convulsions may be controlled by
...of oxygen. If convulsions persist, the intravenous
...istration in small increments of an ultra short-acting
...urate (i.e., thiopental, thiamylal) may be used. If these
...available, a short-acting barbiturate (secobarbital,
...barbital) may be used. Intravenous barbiturates
...only be used by those familiar with their use.
...ergic reactions are characterized by cutaneous
...of delayed onset, or urticaria, edema, and other
...reactions of allergy. The detection of sensitivity by
...testing is of doubtful value.

DOSAGE AND ADMINISTRATION: As with all local anesthetics the dose varies and depends upon the area to be anesthetized, vascularity of the tissues, individual tolerance and the technique of anesthesia. The lowest dose needed to provide effective anesthesia should be administered. For specific techniques and procedures refer to standard dental manuals and textbooks.

For infiltration and block injections in the upper or lower jaw the average dose of 1 cartridge will usually suffice. Each cartridge contains 1.8 ml. (36 mg. of 2% or 54 mg. of 3%). This dose may be doubled if necessary to effect anesthesia. The maximum dose should not exceed 3.6 mg. per pound of body weight.

Any unused portion of a cartridge should be discarded.
HOW SUPPLIED: Carbocaine (brand of mepivacaine) HCl 3% without vasoconstrictor—each ml. contains: Carbocaine HCl, 30.0 mg.; sodium chloride 3.0 mg.; and water for injection. Methylparaben 1.0 mg. is added to the

solution and pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

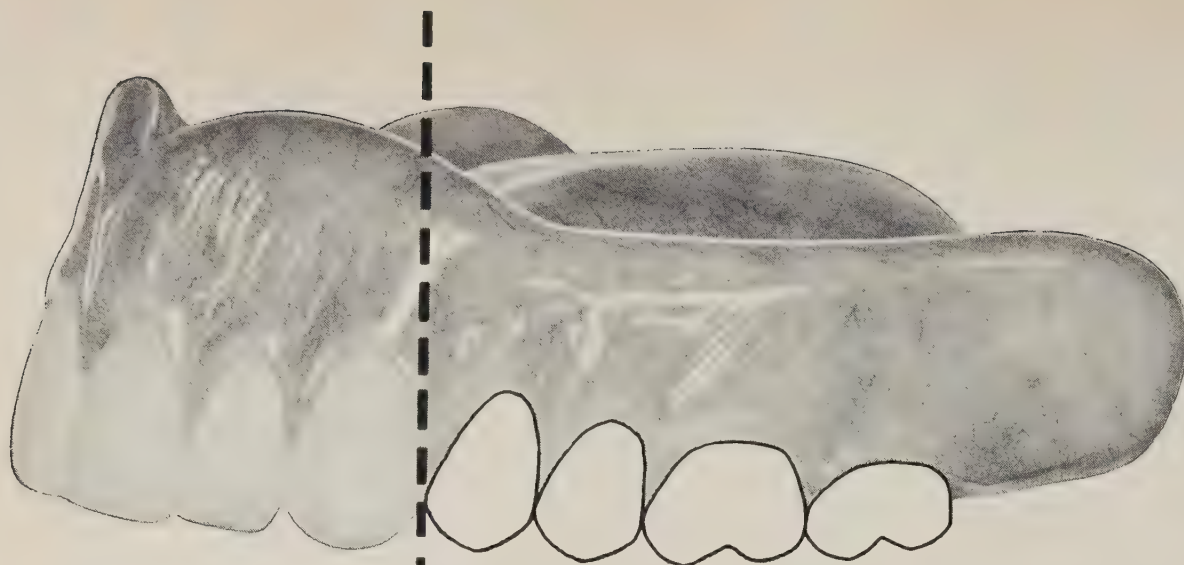
Carbocaine HCl 2% with Neo-Cobefrin (brand of levonordefrin) 1:20,000—each ml. contains: Carbocaine HCl 20.0 mg.; Neo-Cobefrin, 0.05 mg.; sodium chloride 4.0 mg.; acetone sodium bisulfite, not more than 2.0 mg.; and water for injection. Methylparaben 1.0 mg. and sodium lactate 1.0 mg. are added to the solution and the pH is adjusted with sodium hydroxide or hydrochloric acid in multiple dose vials.

Both formulas are available in 1.8 ml. cartridges, cans of 50, to fit the Carpule* Aspirator; and in 50 ml. multiple dose vials.

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Le Canada

Nouvelle Association Québécoise

Dans le cadre de la mise en application prochaine du régime québécois de soins dentaires pour les enfants, une nouvelle Association québécoise verra à regrouper les chirurgiens-dentistes prêts à participer à un tel régime. Ceux-ci sont désireux, par l'entremise d'une entente avec le ministre des Affaires sociales, de rendre possible la distribution de certains services dentaires aux enfants et ce dans le plus bref délai.

On se souviendra qu'à la fin d'avril, l'Association des chirurgiens-dentistes du Québec, sur la recommandation de son comité de négociation avait rejeté l'offre gouvernementale. Ceci avait entraîné la démission du président de la dite Association. De plus, ceci allait à l'encontre de la recommandation faite par le conseiller technique de l'Association.

Or il arrive qu'un groupe imposant de chirurgiens-dentistes est dissident du refus manifesté par cette Association. Ils se sont donc formés en une autre Association sous le titre de l'Association Dentaire du Québec et désirent entamer sous peu les démarches nécessaires auprès du ministre Castonguay afin de hâter la négociation et de participer au régime de soins dentaires pour les enfants, lequel a été promis au public à plusieurs reprises.

Les membres de l'Exécutif de l'Association dentaire du Québec sont les Docteurs: Hubert La Belle, André Le Blanc, Michel Riedl, Jean-Guy Boily, Maurice Lamoureux, Romuald Sénéchal et Nicole Renaud.

Une invitation toute spéciale est faite aux chirurgiens-dentistes désireux de participer au programme de soins dentaires pour les enfants. Pour ceux de la région métropolitaine ils peuvent communiquer leur adhésion à 842-4716, pour ceux de l'extérieur de Montréal par lettre à: Association dentaire du Québec, 666 ouest rue Sherbrooke, suite 501, Montréal 111, P.Q.

La santé dentaire à Informatour

Informatour est un vaste programme d'information destiné à mieux faire connaître à la population du Québec les services gouvernementaux qui sont à sa disposition.

Sous le thème "Je me brosse les dents," le kiosque du ministère parcourt actuellement la province et les dentistes hygiénistes tentent par leur présence d'inculquer aux visiteurs les principes d'une bonne hygiène dentaire et de les sensibiliser aux méfaits de "la plaque".

La prévention totale

L'on informe la population que la plaque est un film transparent composé en majeure partie de débris alimentaires et de bactéries. Ces bactéries produisent un acide qui détruit l'émail des dents et peuvent aussi causer des maladies de gencives. L'on insiste sur le fait que l'on peut prévenir presque totalement la carie dentaire en détruisant cette plaque toutes les vingt-quatre heures. C'est la théorie de la prévention totale.

Par des moyens fort simples et peu coûteux: le brossage des dents après chaque repas suivant la bonne métho-

de et l'utilisation de la soie dentaire. Brosse et soie: se brosser les dents.

Le visionnement du film "Je me brosse les dents" donne des indications sur la façon de se brosser les dents avec efficacité. La révélation pour la plupart des gens est quand même la soi dentaire. Bien connue des dentistes, elle reste peu répandue jusqu'à maintenant dans la population qui ignore que la soie dentaire est le complément d'un bon brossage et le moyen le plus efficace d'éliminer la plaque.

Le rétroact

Finalement, les visiteurs désireux de vérifier les connaissances qu'ils ont acquises en visitant le kiosque peuvent les contrôler à l'aide du rétroact. C'est un tableau comportant un certain nombre de questions et réponses. A l'aide d'un bouton qu'on presse, on peut vérifier immédiatement si la réponse qu'on a choisie est juste ou non.

Entreprise depuis le début de mars avec la collaboration du Dr Gilles Pelletier, directeur du Service dentaire du MAS, cette tournée d'information aura mené le kiosque sur la santé dentaire, d'ici octobre, dans quinze centres commerciaux de onze villes différentes.

Signature d'une entente entre le ministère des Affaires sociales et l'Association des spécialistes en chirurgie buccale

Le ministre des Affaires sociales, monsieur Claude Castonguay, et le président de l'Association des spécialistes en chirurgie buccale, le docteur Guy

Maranda, ont signé le 24 septembre 1973, à Québec, une entente dans le cadre de l'assurance-maladie. Cette entente concerne la participation de ces dentistes au régime de chirurgie buccale en milieu hospitalier et au nouveau régime universel de soins dentaires aux enfants.



Dr. Guy Maranda

L'entente signée aujourd'hui renouvelle une entente relative au régime de chirurgie buccale en milieu hospitalier qui est venue à échéance en juillet 1972. Elle inclut de plus le nouveau régime universel de soins dentaires aux enfants nés le ou après le 2 décembre 1965, régime qui entrera en vigueur le 1er décembre prochain.

Par ailleurs, le ministère des Affaires sociales poursuit toujours les négociations avec l'Association des chirurgiens dentistes du Québec en vue d'en arriver à une entente sur les modalités de leur participation à ce nouveau régime.

Les Conseils d'administration doivent motiver leur décision de refuser à un médecin ou dentiste l'exercice de sa profession dans un centre hospitalier

Le directeur du contentieux du ministère des Affaires sociales, M. Jacques Morency, a fait parvenir récemment une lettre à chaque établissement de santé, dans laquelle il rappelle l'obligation pour chaque conseil d'administration de motiver sa décision de refuser à un médecin ou à un dentiste d'exercer sa profession dans un centre hospitalier.

Le ministère a reçu des plaintes de médecins ou dentistes à l'effet que leur demande d'exercice de leur profession

est demeurée sans réponse ou a été refusée sans aucune motivation. Or la Loi 65 est très claire à ce sujet et indique que le comité d'examen des titres doit motiver sa décision en cas de refus et doit fonder celle-ci uniquement sur des critères de qualification, de compétence scientifique et de comportement.

La loi précise que le comité d'examen des titres doit étudier la demande du candidat, faire rapport au comité exécutif du conseil des médecins et dentistes et suite à la recommandation du comité exécutif, le conseil d'administration doit rendre sa décision écrite (motivée en cas de refus) au candidat dans les 80 jours suivant sa demande. Une candidature ne peut pas être refusée pour le motif que le centre hospitalier ne dispose pas d'un nombre de lits suffisants.

Vingt-cinq nouveaux centres locaux de services communautaires (CLSC) dans neuf régions administratives du Québec

Le ministre des Affaires sociales, monsieur Claude Castonguay, a fait connaître aujourd'hui la localisation régionale de 25 nouveaux centres locaux de services communautaires (CLSC) dont l'implantation avait été décidée en juin dernier.

La mise sur pied de ces 25 nouveaux CLSC aura lieu dans neuf régions administratives du Québec, soit le Bas-Saint-Laurent — Gaspésie, le Saguenay — Lac-Saint-Jean, Québec, Trois-Rivières, les Cantons-de-l'Est, Montréal métropolitain, Laurentides-Lanaudière, la Rive-Sud de Montréal et l'Outaouais.

Trente-trois projets de CLSC ont déjà été mis en marche, et huit d'entre eux dispensent déjà en tout ou en partie des services de santé et des services sociaux de première ligne, c'est-à-dire des services de base facilement accessibles, continus et de qualité.

L'addition de 25 nouveaux centres aux 33 mis en marche antérieurement, fait suite à des études et recommandations de la direction de la Planification des Affaires sociales en juin dernier. Ces recommandations ont été soumises pour consultations et avis aux Conseils

régionaux de la santé et des services sociaux (CRSS), au cours de l'été dernier. Les CRSS ont fait part de leurs recommandations au ministère qui a par la suite apporté les modifications jugées appropriées.

Plus particulièrement, le ministère et les CRSS sont parvenus conjointement à identifier les districts où l'on devait implanter des centres locaux de services communautaires (CLSC) de façon prioritaire. Pour localiser ces districts, l'on a surtout tenu compte de certains indicateurs généraux assez souples comme la proximité d'un centre hospitalier, l'accessibilité de sa clinique externe, l'importance accordée par la population à l'obtention de tels services.

Un chargé de projet sera ensuite désigné par le ministère pour chacun de ces centres et un comité provisoire d'implantation sera formé en collaboration avec la population concernée.

Le ministre des Affaires sociales tient à rappeler que c'est au comité provisoire d'implantation de chaque district qu'il appartiendra de déterminer la localité où sera situé le nouveau centre local de services communautaires (CLSC).

Le ministre des Affaires sociales a aussi ajouté que le nouveau programme d'implantation ne touchait ni la Côte-Nord, ni le Nouveau-Québec pour la simple raison que l'on attend le rapport d'un comité d'études sur les régions éloignées, lequel devrait proposer des formules plus adéquates pour ces régions.

Un rince-bouche fluoré diminue la carie dentaire

Des enfants de Vancouver ont participé à une étude réclamant qu'ils se rincent la bouche une fois la semaine avec une solution fluorée. L'enquête a révélé qu'ils présentaient 27 pour cent moins de cavités qu'un groupe témoin utilisant un rince-bouche non fluoré.

Le docteur S.J. Gallagher, directeur de la Santé dentaire au service de Santé de Vancouver a déclaré que l'expérience du rince-bouche fluoré avait démontré sans conteste la capacité de ce dernier à réduire la carie dentaire.

Les résultats de cette étude furent révélés au cours d'une récente réunion

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de l'Association de Santé publique. L'enquête, qui dura deux ans, portait sur 900 élèves de cinquième année, dont plusieurs provenaient de secteurs à revenus modiques.

Au cours de l'expérience, qui se déroula sous la surveillance des enseignants, les enfants se rincèrent la bouche avec la solution, une fois la semaine durant une minute. Les examens dentaires des enfants furent effectués avant l'expérience et les résultats comparés à ceux d'examen subis deux années plus tard.

Le docteur Gallagher a signalé que l'utilisation du rince-bouche pouvait être inclus dans un programme de prévention destiné à réduire la carie dentaire, même dans les régions où l'eau de consommation n'est pas fluorée. Il expliqua que dans la mesure où une personne avait l'occasion de bénéficier de plusieurs programmes de ce genre, meilleurs seraient les résultats, puisque les effets sont cumulatifs.

En effet, comme le rince-bouche n'est pas avalé, il ne se produit aucune augmentation de l'ingestion de fluorures, et conséquemment, il est sans danger.

Nouvelles internationales

L'ADA étudiera les attitudes et le comportement du public

L'étude du système couramment adopté pour la prévention des caries dentaires constituera le premier projet de recherches entrepris par la Division des sciences du comportement, qui vient d'être formée à l'intérieur de l'American Association Research Institute. L'inauguration de cette nouvelle division de l'Institut et la nomination des titulaires qui occuperont les postes-clés ont été divulguées conjointement par le docteur C. Gordon Watson, directeur de l'exécutif de l'ADA et le docteur Kirk Hoerman, directeur de l'Institut.

Le docteur Helen G. Newman, de Chicago, occupera les fonctions de directeur de la Division des sciences du comportement.

L'inauguration de la Division, la huitième de l'Institut qui compte peu d'années d'existence, est due en grande partie au contrat de recherches accordé par le gouvernement fédéral, en mai dernier, pour l'étude du rôle du dentiste dans la pratique des méthodes adoptées pour prévenir la carie dentaire. Ce projet de recherches étudiera les connaissances, les croyances, les attitudes et la pratique courante des dentistes concernant la prévention des caries, afin de déterminer l'efficacité des dentistes individuellement, et comme membres des sociétés dentaires professionnelles, dans la tâche de modifier les attitudes préventives et le comportement du public.

Le contrat de recherches de 18 mois est réalisé sous la direction du programme national sur la carie du National Institute of Dental Research. Les travaux ont pour but de fournir l'orientation nécessaire aux responsables des programmes, par l'entremise desquels la profession dentaire parviendra plus efficacement à mettre en oeuvre la distribution des services dentaires préventifs.

Les dentistes de la Nouvelle-Zélande préparent leur Conférence de 1974

La réunion biennale de l'Association dentaire de la Nouvelle-Zélande aura lieu à Auckland, du 26 au 30 août 1974. Tous les membres de la profession dentaire sont invités à ces importantes assises.

Le thème de la conférence portera sur les "Progrès de la thérapie dentaire", et les conférenciers invités compteront le docteur Carl Boucher, de l'Ecole dentaire de l'Ohio State University et le docteur Ralph Phillips de l'Ecole dentaire de l'Indiana State University.

L'exposition et le programme scientifique se tiendra sur le campus de l'Université d'Auckland. Les organisateurs ont prévu des facilités de logement pour les délégués à proximité du centre des activités et ils ont établi soigneusement un programme d'événements sociaux, sportifs et touristiques très variés, susceptible de plaire à tous les délégués de l'extérieur.

On obtiendra des renseignements supplémentaires en s'adressant à mon-

sieur N.K. Nicholas, secrétaire de la Conférence, NZDA 1974, Biennial Conference, P.O. Box 280884, Remuera, Auckland, New Zealand.

Organisations dentaires

Le Docteur Tenenbaum, président de la Société dentaire de Mont-Royal et de l'Alpha Omega de Montréal

Docteur M. Tenenbaum a été élu président de la Société dentaire de et de l'Alpha Omega Fraternity de Montréal. Mont-Royal compte 250 dentistes de la région de Montréal et célèbre cette année la 52e anniversaire de sa fondation.

Le docteur L. Prosterman a été choisi en qualité de vice-président, le docteur F. Muroff, secrétaire correspondant, le docteur Hershenfield, secrétaire-archiviste et le docteur E. Kleinman, trésorier.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 30 septembre 1973:

Fonds avec garantie \$10.418

Fonds à revenu fixe \$13.945

Fonds d'actions ordinaires \$13.042

L'avoir total (valeur marchande) du régime se montait à \$16,578,541.40.

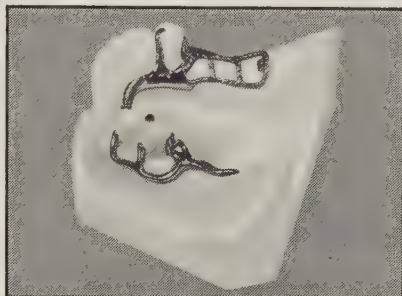
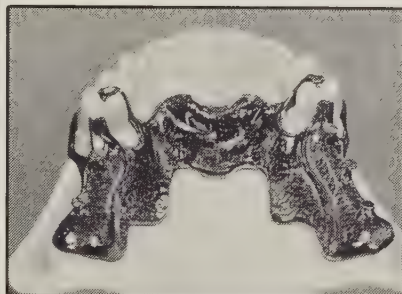
Au cours du mois précédent, les transactions ont été les suivantes: achat 2,500 actions de Distillers Corp. Seagrams; 2,000 actions de MacMillan-Bloedel; 3,000 actions de Royal Bank of Canada; 4,000 actions de Trans Canada Pipelines; \$800,000 Aluminum Company of Canada note; \$600,000 Consumers Gas Co. note; and \$500,000 Mercantile Bank of Canada note. Vente 1,900 actions de Westburne International; \$1,300,000 Aluminum Company of Canada note; et \$800,000 Aluminum Company of Canada note.



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Open-field concept

Crucial to the future of private dental practice is the creation of an environment in which dentists and auxiliaries can find rewarding careers working together to supply high quality service for the public at sensible prices. The "Open-Field Concept" described by Dr. Braunig is a highly imaginative and commendable innovation in the delivery of dental care. Dr. Braunig will welcome further questions and, although readers may write to him individually, they are invited to address their letters to the Editor so that others may share in the exchange of ideas. In our opinion, there is more to Dr. Braunig's concept than mere removal of walls — i.e., the open-field — this ability to develop and manage an effective dental service unit which has a chance to survive in the years of testing that lie ahead for the profession.

The Editor

S. R. Braunig*

Theory

The open-field group concept of practice developed over a period of years as the result of dissatisfaction with the one-operatory/one-room office. The basis for this dissatisfaction was two-fold: no room and no control. Not only was movement limited in a busy practice by doors, causeways, walls and equipment, but also the physical barriers of this traditional design induced an atmosphere of cobwebbed claustrophobia, a noisy, machine-laden atmosphere, confusing and frustrating the efforts

*Address: Suite 310, 2025 West 42 Ave, Vancouver 13.

In this innovative approach to group practice the eight operatories — including mobile units, multi-coloured chairs and ceiling-mounted lights — lie on the periphery of the circle whose centre is the supply hub.





Paintings, drawings and wood carvings are used to enhance the decor throughout the work areas and halls.

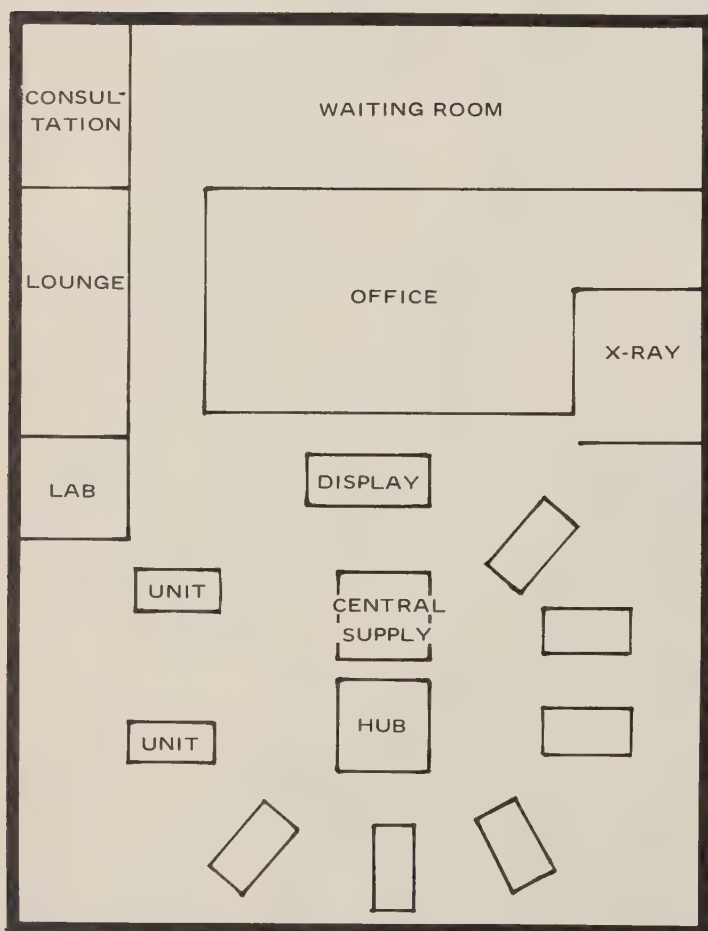


Fig 1. Design of Open-field concept of group practice

of the dentist and his staff. The secret room, the forbidding room, the room where the ordeal was to transpire; these thoughts occupied the patient's mind as he waited his turn. And the beleaguered dentist laboured under the misconception that the solace of privacy bestowed upon his patients that perfect state of tranquillity required for successful management. This misconception was harboured by black memories of the open confusion of impersonal operatories at dental school, as well as apprehensive patients who wished to conceal their dental disease and discomfort from the world. It was clear that the dentist required an open area containing all operatories in which effective monitoring was as simple as the sweep of an eye, where openness was not synonymous with public intrusion, and where the revolutionary methods of preventive and reconstructive dentistry could be employed with ease. From the patient's viewpoint the open-field is psychological rather than spatial, although the former is dependent on the latter. A group of people may interact positively in a warm, friendly environment and it is the rare patient who does not respond and benefit from the experience.

Design

The physical solution to date is schematized in Fig 1. Surprisingly, less than half the total 2400 square feet of office space is consigned to operatories. Office, waiting room, staff lounge, consultation, room, x-ray room — these para-functional



The spacious reception area is modern and brightly lit. Operatories can be seen in the background.

areas have not been squeezed into side rooms, closets, or drawers. They have in the office the priority they deserve.

The eight operatories, including mobile units, multi-colour chairs, and ceiling mounted lights, lie on the periphery of a circle whose centre is the central supply hub. Each chair may be completely revolved without touching a wall, the supply hub, or another chair. The patient's head is nearest the supply hub. Two-thirds of the chairs face spacious windows. Paintings, drawings, wood carvings and study casts adorn the walls, work areas and halls. The patient may easily view the operatories on his side of the central operatory without openly prying.

The radial arrangement of the operatories serves as the focal point of activity, although the concentric arrangement of the parafunctional areas funnels traffic away from the central area and thus minimizes congestion.

Personnel

The vital link in the chain of interactions that support the successful dental service is the personnel. The more numerous the staff, the more difficult the co-ordination of such services. The open-field not only provides a method for immediate regulation of a large and diversified staff, but also stimulates an expansion of duties. This is accomplished in three ways:

1. Rotation of personnel so that operating teams learn from each other.

2. Pay scale graded to technical accomplishment rather than duration of employment.

3. Operators and experienced auxiliaries share a responsibility for training the less experienced staff.

It can be seen that enhancement of skills must be accompanied by an encouragement of versatility, not only for the sake of amenability of work schedules, but also for the degree of co-ordination and management that must be achieved in a multi-chair operatory. Thus, for example, all clinic staff participates in the preventive program.

The inexperienced employee joining the staff is exposed daily to all phases of dental services because of the open work area. In addition, the new employee must adjust to all other personalities, at least in a working capacity; it is impossible to hide in the open-field. Because of the rational basis for pay scale, as well as the requirements for rotation of labour in all phases of dental service, the co-operative nature of personnel is promoted and envious cliques are eliminated. The open-field clinic actively subsidizes auxiliary skills by effective on-job training and continuing education.

The staff may modify office policies via monthly meetings where grievances are aired and new



Although the environment is completely open, the set-up allows confidential discussion between the dentist and patient. Dr. Waterman is shown above with a patient. (All photos by Malcolm McTaggart of Vancouver.)

methods formulated. In the above ways, the dental personnel are responsible for their own, as well as the dentist's and patients' future.

Patient — In the open-field the patient may easily share and thus dissipate pre-operative anxieties with other patients. The act of observing other patients openly, successfully, and painlessly undergoing treatment is a powerful conditioner. Because the patient in the open-field is not confined by walls, dividers or blinders, there may even be conversations between patients in the operatory. Several members of the same family may share their dental experience together so that the individual ceases to be a lonely victim condemned to endure private suffering.

The open-field is small enough so that conversations between dentists and patients are heard throughout the area, and large enough to prevent noisy, circus-like confusion. Assuming a homogeneous dental philosophy on the part of all operators, the open-field exposes patients to multiple, simultaneous verbal cues which serve as conditioners for better dental health. In the open-field group practice the patient enjoys other advantages:

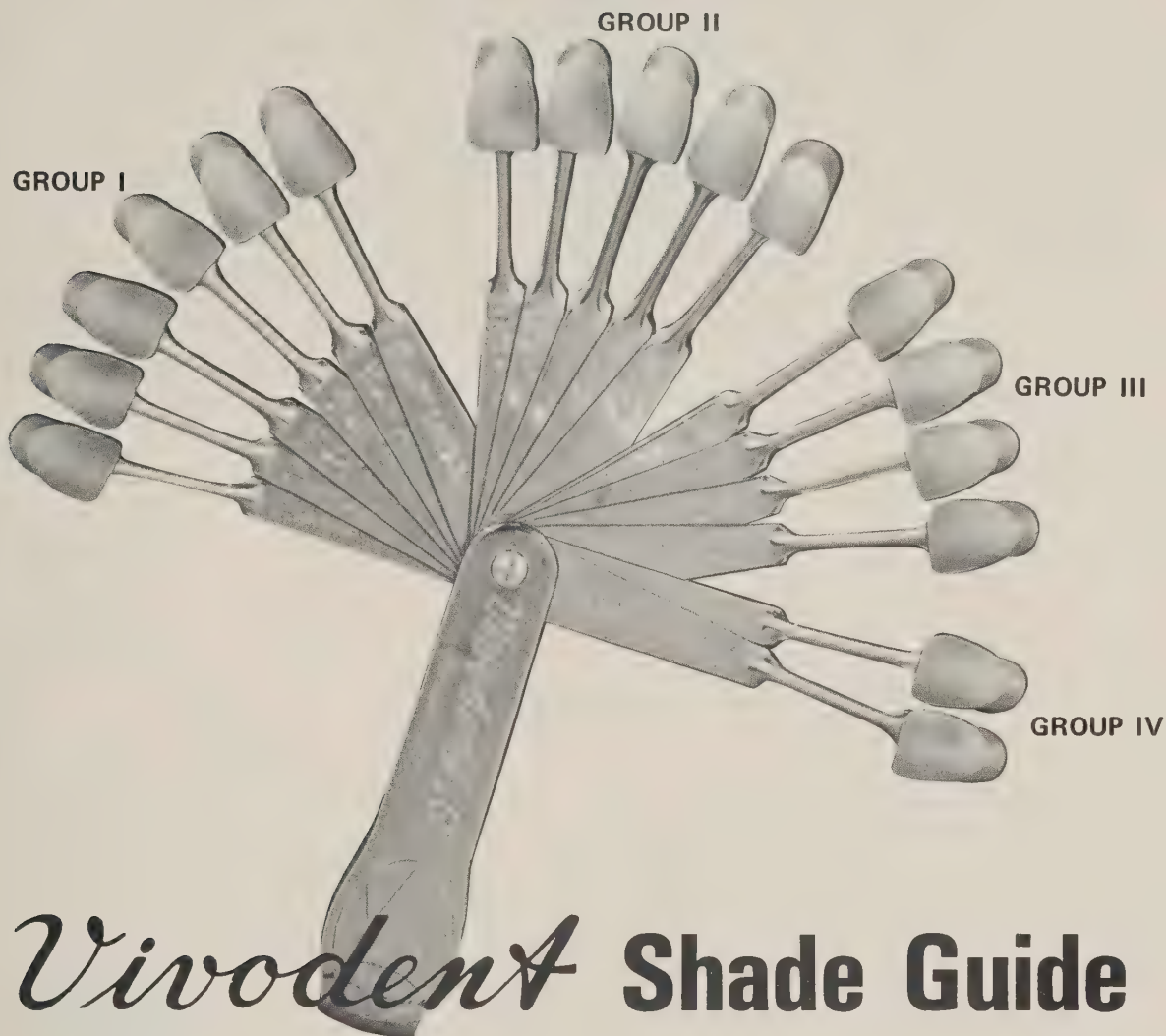
1. His emergencies are easily accommodated by at least three operators practising six days a week.
2. There is instant referral and discussion of cases with other operators.
3. Because the work load is lighter, more time is spent with each patient.
4. Greater operator qualification because of time available for postgraduate courses and study clubs.

Dentist — The dentist in the open-field group practice may specialize in his field of interest if he wishes, sharing his knowledge with the group. In fact, the operators meet weekly to discuss cases and to practise new techniques. They become a labour-saving, self-activating study group who share their expertise. This is in contrast to other "group practices" where practitioners share the same space and equipment, but really work in isolation.

In the open-field environment less stress is placed upon each operator because there is more efficient use of time and hence, shorter hours spent in the office. Each operator's work is open to continual peer evaluation that assures a high standard of technique. This subtle monitoring by peers is excellent insurance against misdiagnosis and malpractice. Educational opportunities in the open-field group practice include office subsidized postgraduate courses, study clubs and faster acceptance of the most modern techniques by the entire operating staff.

The open-field group practice conditions all those within it. It is not difficult to create, but requires cooperation and stringent financial management. Overhead may be controlled in a large group practice by sharing daily operating costs as well as amortization of large capital expenditures. In a community capable of supporting group practice, the open-field concept provides both quality and sufficient quantity of dental services, while broadening the horizon of human relations.

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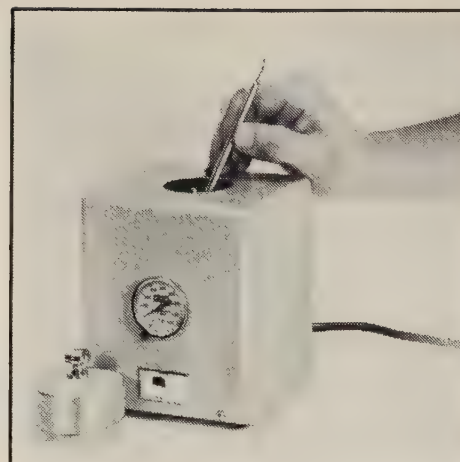
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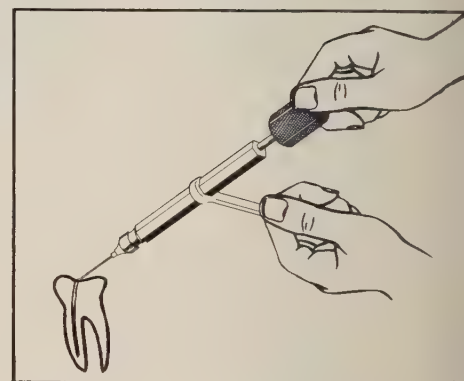


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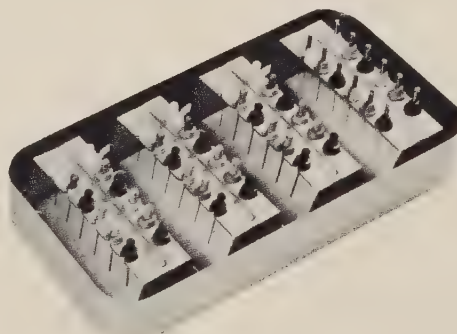
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HOW TO AVOID THE HIGH COST OF DENTAL WORK

M. Truuvert, DDS, D.Paed.*
Toronto

The following article first appeared in the August, 1973 issue of "Canadian Consumer." We feel that this article merits reprinting as an example of the type of material which would fit into the preventive program of any dental office.

Cavities can be cut down and periodontal disease largely prevented by good eating habits and by methodically removing bacteria from tooth surfaces. In general, cavities are attributable to a common strain of bacteria in the mouth — Streptococcus Mutans. When bacteria is exposed to sucrose (everyday sugar), either in free form or in food or drink (hidden sugar), Streptococcus uses it within minutes for producing, among other things, a sticky mass called dextran. Dextran clings to tooth surfaces and forms an ideal hiding place for both its parent and various other mouth bacteria. This mass is called "plaque". In addition to sucrose, these bacteria feed on fructose and glucose (in honey, fruits, vegetables) and produce a strong

acid — a very rapid process taking place within a few minutes from the introduction of sugar into the mouth. This acid is then held close to the tooth by the plaque and has an excellent chance to attack the tooth enamel, which is practically pure mineral substance. After repeated attacks, the tooth surface is damaged and a cavity is formed. Once the cavity is there, the tooth cannot repair itself but has to be restored by a dentist. Hence, for a cavity to form, we need three elements:

- (a) the tooth,
- (b) bacteria,
- (c) sugar.

How to cut cavities

The tooth is there and we want to save it. Ways to make it more resilient to acid attacks will be discussed later.

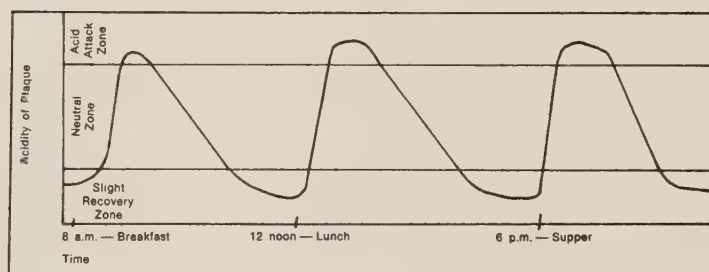
The bacterial mass can be partly cleaned away from approximately 85% of each tooth surface, but some areas, i.e. the bottom of very deep pits and fissures on chewing surfaces and areas between teeth are not accessible to the brush. In these hidden areas most cavities are formed. We have already seen how fast bacteria work to form new dextran and acid.

*Dr. Truuvert is a lecturer and instructor at the Faculty of Dentistry, Department of Preventive Dentistry, University of Toronto.

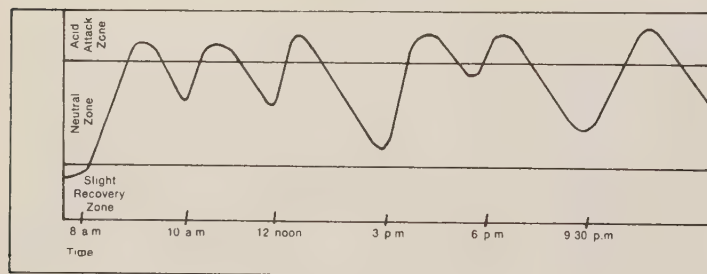
Attacks on the tooth can be kept to a minimum by consuming as few sugar-containing foods as possible. During main meals, a great volume of saliva is normally produced by the salivary glands. This so called stimulated saliva acts as a powerful neutralizer of acids, and when something sweet is eaten directly with a main meal, its effect is usually not long lasting, approximately half an hour, depending on the nature and concentration of the sweet. Resting saliva, the one normally produced between meals, is much decreased in both volume and neutralizing ability. Hence, when something sugary is eaten between meals, the acid attack on teeth is stronger and lasts much longer than the mealtime attack. During the night, salivary flow dries up almost completely, so anything sweet eaten at bedtime affects teeth practically all through the night, unless evening cleaning removes 100% of the plaque, which is doubtful.

Snacking — enemy of teeth

As most meals contain something slightly cariogenic (acid-producing), we can count on three waves of acid production with three normal meals a day. The picture would look something like this:



This pattern is unlikely to produce many cavities. However, if we add three very minor snacks, i.e. a Lifesaver candy at 10:00 a.m., a cookie and soft drink at 3:00 p.m. and a cup of hot chocolate at bedtime, the picture would be slightly different.



The acidity would hardly have a chance to fall enough for the enamel to reach the remineralization zone. If this eating pattern is followed

constantly, the result could easily be rampant caries (decay almost out of control). Of course, there are many steps between no caries and rampant caries, which can all be achieved with different snacking patterns of various foods.

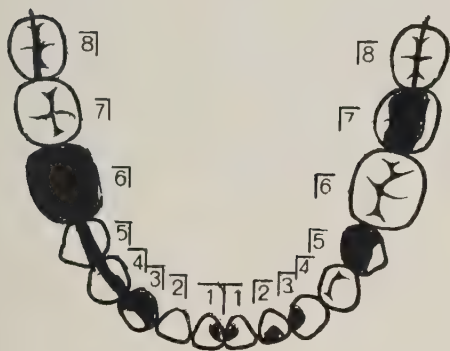
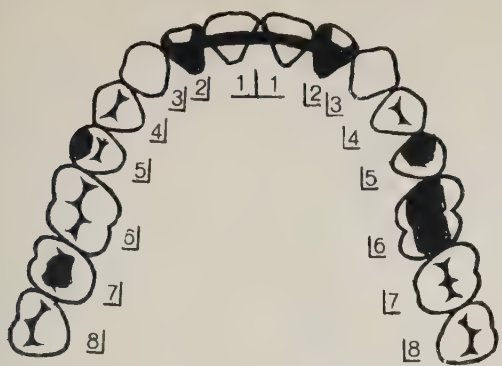
Although individual resistance plays a role in decay formation, much depends on the concentration and stickiness of the sweet eaten. Higher concentration means more and quicker plaque and acid formation. The longer the sweet clings to teeth and remains in the mouth the longer it is available for bacteria to feed on. Toffees and licorice are two of the worst enemies of teeth, along with Lifesavers, breath mints and all candies and lozenges that remain in the mouth for a long time.

A baby's pacifier (dummy) dipped in honey or sugar also belongs in this category and is disastrous for very young teeth, along with Crackerjacks, marshmallows and Wagon Wheels. Soft drinks are culprits too as they are seldom gulped down, but sipped leisurely, keeping all surfaces of teeth in an acid bath for some time. An over-night juice or formula bottle for the baby, and seven cups of coffee with sugar, sipped by an adult during a day, have a similar effect, except that adult teeth tend to be more resistant to decay.

Honey, jam and syrup are offenders due to both high sugar concentration and stickiness. The well-known snack favourite of most Canadian children — cookies — is also conducive to cavities. Studies have shown that the less fat a cookie contains, the more harmful it is to teeth. Dry cookies, such as arrowroots can be cariogenic. The dental profession strongly questions the practice of feeding babies arrowroot cookies or any other sugar-containing biscuits during teething. This does not mean that fat-containing cookies are harmless, it is merely a matter of degree.

Sweetened cereals — poor nutrition

Presweetened cereals can be placed in the same category as dry cookies. Only if they are thoroughly soggy with milk do they lose some of their ability to stick in the deep pits and fissures abundant on young teeth — and most children prefer them crisp. From daily contact with many Canadian diets (most of them urban, Toronto area) our experience has been that children like and eat presweetened cereals, both as breakfast food and as snacks. Lately, the cereal industry has made a great effort to make them acceptable to parents by for-



ifying them with iron and/or Vitamins B₁, B₂ and B₃ (thiamine, riboflavin and niacin). Take for instance, the relatively new Count Chocula (General Mills) which is intended as a cereal but, according to many children, quickly becomes soggy in milk, and tastes better as a snack. Let us look at the main ingredients: chocolate, marshmallows, sugar, oat flour and corn syrup, fortified with iron. The dental profession considers this a dangerous way of supplying iron, practically the only worthwhile nutrient in the product.

Both General Foods (Post) and Kellogg's produce a variety of unsweetened enriched cereals, but their presweetened products, to our knowledge, are also enriched, encouraging parents to buy. Among the most popular from Post are Alpha Bits, Honey Combs and Sugar Crisp and from Kellogg's, Frosted Flakes, Froot Loops, Apple Jacks, and Sugar Pops. In all these, the sugar is incorporated directly into the cereal and thereby, not easily dissolved, making them more cariogenic (decay causing) than those not presweetened. Sugar sprinkled on plain cereals is a separate entity and thereby more easily dissolved.

Quaker Oats, who prepare and package one of the most wholesome breakfast cereals, Oats, as well as one of the most cariogenic and useless, Captain Crunch (at least they do not pretend it is a healthy

food, as to our knowledge, it is still not enriched) has recently also joined the rather shady area of presweetened cereals by bringing out instant oat-meals, e.g. Sugar and Spice, Raisin and Spice, Artificial Maple and Brown Sugar, Apples and Cinnamon, all of them presweetened. Here, sugar is a separate entity and dissolves in the hot water supposed to be poured on the cereal. All of these cereals are, however, very sweet.

Lately, there has been a noticeable increase in another kind of breakfast food, the Pop Tart, and Kellogg's recommend it "for snacks and breakfast". Originally they appeared only in plain form with either blueberry or strawberry filling, but now there is an added attraction, frosting.

However, they are not yet enriched and thus some shoppers have resisted buying them. As far as nutrition and teeth are concerned, they are merely useless "empty" calories, harmful to teeth.

In September, 1963, Metropolitan Toronto fluoridated its water supply. This very act has caused confusion and misinterpretation of facts even in many otherwise intelligent, well-educated families. Parents cannot explain the difference in caries rate in their different age children. Granted, individual resistance has some relevance, but in most cases fluoride incorporated into teeth during early development inside the gums makes the great difference. It can reduce cavities well over 50% depending, of course, on the individual's water intake. Topical application of fluorides, even when done very regularly, normally does not afford the same degree of protection.

Most doctors not nutritionists

Many members of higher income and supposedly better educated groups never cease to amaze doctors, dentists and nutritionists with their lack of knowledge about nutrition and especially sugar. It is not surprising, considering the amount of literature on nutrition flooding the market these days. As there is no control over this type of publication, many are worthless. How to tell the good from the bad? The safest way is to trust government publications and books and pamphlets written by acknowledged experts in the field, some of whom are recognized by or working in big hospitals, universities, etc. Every child is entitled to a provider with some detailed knowledge of nutrition. It may come as a surprise to many, but few medical doctors are automatically experts in nutrition. It would be impossible to demand it from them. Only those who have taken a special interest in the subject should be dispensing advice on bal-

anced nutrition (similarly for dentists, but people normally do not expect so much from them). Many doctors are well aware of their shortcomings and refer patients to nutritionists and dietitians for expert advice. In Toronto, there is an excellent public service available called "Dial-a-Dietitian", which gives sound advice in all dietary matters relating to health and disease.

Common errors in diet

What are the most common errors in everyday diets? In nutritionally better educated groups, fruits and vegetables are adequate and even plentiful. This is often so regardless of income because there are seasonal fruits, vegetables and juices (fresh or canned) that are within reach of low income groups. Meat is normally eaten daily even in the poorest homes. Milk, however, is often considered necessary for children only and adults replace it with coffee and tea, frequently with artificial cream. In so doing, they are drifting away from our most important source of calcium — difficult to replace with other foods. The plentiful amounts of riboflavin (Vitamin B₂), protein and Vitamin D (in enriched milk) are somewhat easier to obtain in other foods and supplements. It is commonly believed that milk is needed only in the growing years. We forget, however, our normal daily losses of all nutrients, which have to be replenished. We have even observed a tendency to introduce coffee to rather young children. If taken in small quantities, it will probably not do any harm, but will establish a habit for later years.

Sugar function

In sugar intake, intelligence and education are among the determining factors. Toronto at least gives an impression that even the poorest are able to afford sweets to spoil children's teeth. There is still a widespread misconception that sugar is necessary either to supply energy or to help the brain to function. The brain function aspect represents a complete misunderstanding. A normal body does require a limited amount of carbohydrates (to which group sugar belongs) for proper functioning. It is, however, extremely difficult to compose a diet without any, because they exist in bread, potatoes (starch), fruits, vegetables, milk,

etc. Even a normal diet where sucrose (sugar) has been excluded, contains much more carbohydrate than the body utilizes. All carbohydrates can cause cavities under certain conditions but the chance is so remote that it will not be discussed in this article. As far as energy is concerned, the common measurement unit for energy is a calorie and most of us today are trying to avoid an overabundance of those. Even juvenile obesity is becoming a definite problem. Add to this other diseases and conditions so prevalent in civilized societies: heart disease, diabetes, acne, etc. Research strongly points towards highly increased sugar intake as a strong factor in all of these. Dr. Otto Schaeffer, in his excellent article, "When The Eskimo Comes To Town" (Nutrition Today, November-December, 1971), points out very poignantly, the impact on the Canadian Eskimo's health when his sugar intake increased from 26 pounds per capita per year in 1959 to 104.2 pounds per capita per year in 1967.

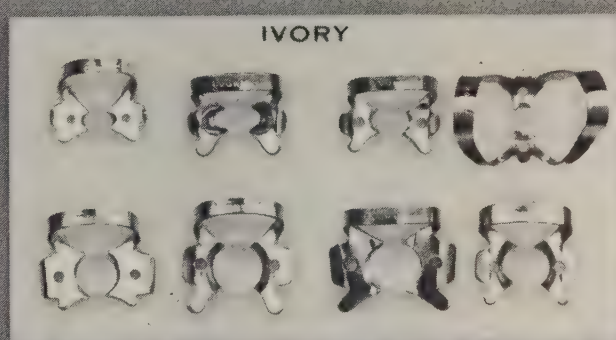
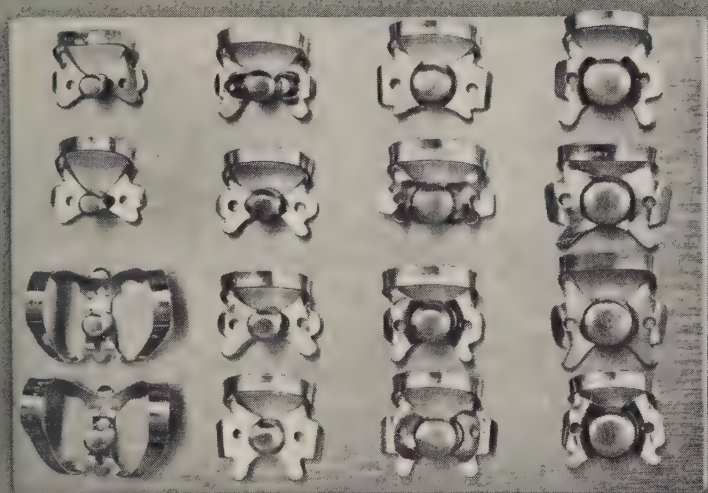
The only areas where sugar intake would be of any benefit, would be for a specific medical reason or in sports where athletes, before and during competitions, would need something to provide a sudden, quick spurt of energy (it fades away fast!) without filling the stomach. A long-term dependence on sugar as a main source of energy would be disastrous.

The craving for sweets people mention sometimes, and take as a sign that the body needs sugar, is only parallel to a craving for cigarettes in a habitual smoker — a body never needs a cigarette. A liking for sweets is just as much a habit as all the other well-known habits we try to conquer. To have a fair idea of sugar intake, keep a record of everything that is eaten (or rather put into the mouth, because regular gum chewing counts too) during one week. Then draw red circles around every sweet, even if it is just one TicTac candy or a cup of coffee with one teaspoon of sugar, and count the circles. Surprised?

The opinions expressed in this article are those of the author.

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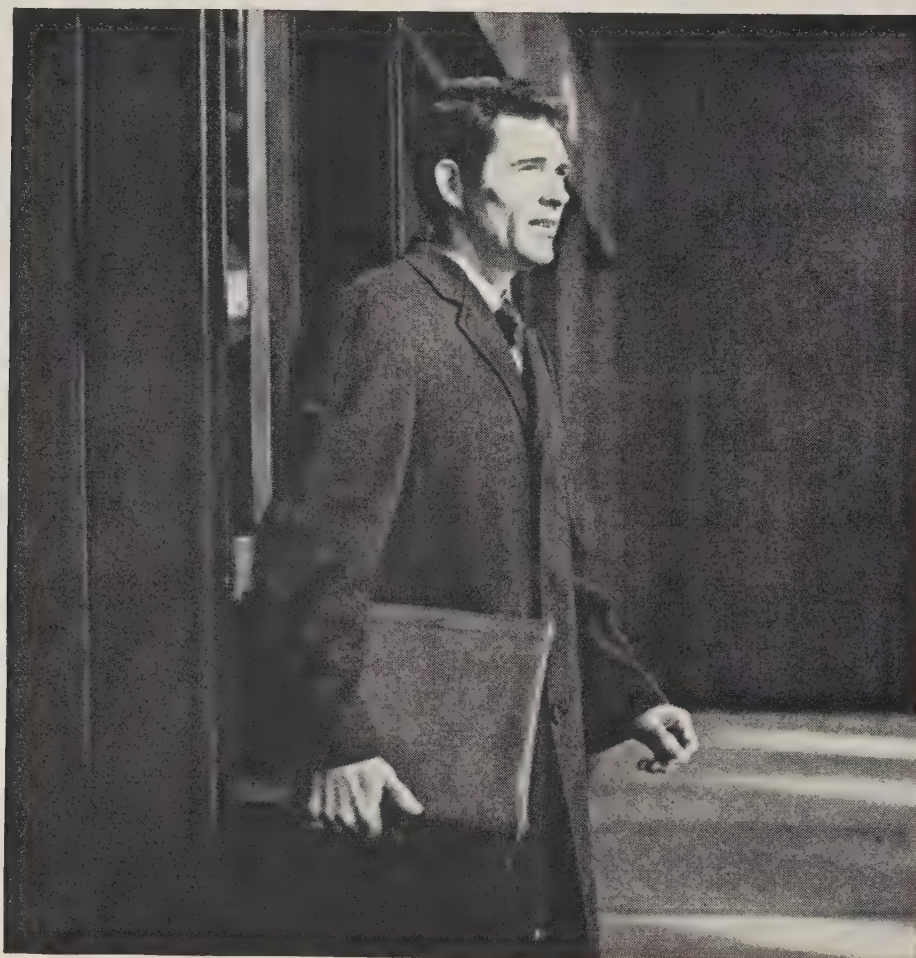
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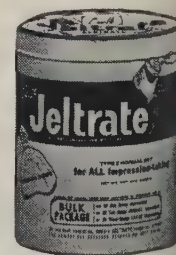
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Sagittal osteotomy for correction of maxillo-mandibular deformities

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Vancouver

Compared to other forms of bone surgery, Obwegeser's intra-oral sagittal osteotomy is a relatively inaccurate and difficult method for the correction of mandibular prognathism. Its principal advantages are the elimination of extra-oral scarring and the flexibility resulting from apposition of extensive surfaces of cancellous bone. Because of the broad cancellous apposition of fragments there is a lesser tendency for relapse and much earlier bony union.

Comparée aux autres formes de chirurgie osseuse, l'ostéotomie sagittale intra-buccale d'Obwegeser constitue une méthode relativement imprécise et difficile pour la correction du prognathisme mandibulaire. Ses avantages principaux comprennent l'élimination des cicatrices extra-buccales et la flexibilité résultant de l'apposition de grandes surfaces d'os spongieux. Dû à l'apposition considérable de fragments d'os spongieux, la tendance à la rechute est moins forte et la soudure des os plus hâtive.

This article is provided by courtesy of the Royal College of Dentists of Canada.

The surgical correction of mandibular prognathism is a well established method of treating Class III malocclusions. Crude but effective operations of this type were first performed in the early nineteenth century. More recently a number of different surgical procedures have been described and evaluated.¹⁻¹²

In the mid 1950s Trauner and Obwegeser^{1 3} developed a technique for correction of this deformity. Basically, this involved the bilateral division of the posterior portions of the mandible in a sagittal plane (Fig 1). This procedure permitted the freed anterior tooth-bearing fragment to be moved posteriorly into the desired position of occlusion. Subsequent fixation of this anterior fragment in the newly established position of occlusion for a period of six to eight weeks would normally result in good bony union of the mandible. This intra-oral approach overcame the disadvantage of extra-oral scarring beneath the angle of the mandible, while the apposition of large surfaces of fresh, bleeding, cancellous bone resulted in virtually no incidence of non-union. In addition, the procedure offered an unusual degree of flexibility for treat-

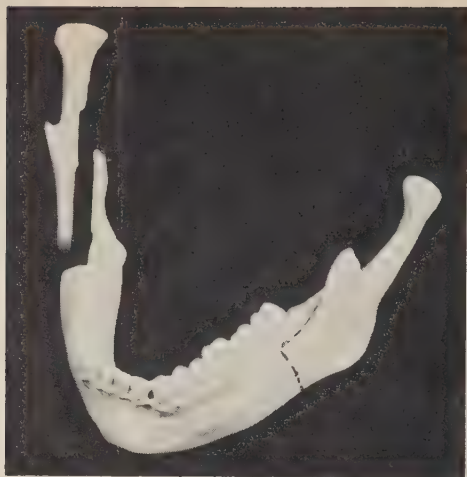


Fig 1 The sagittal splitting technique, showing the basic cuts whereby the posterior portions of the mandible are divided bilaterally in a sagittal plane.

ment of various types of maxillo-mandibular deformities.

The evolution of Obwegeser's technique is interesting. Many years ago, while treating a mandible which had fractured in a sagittal plane in the ascending ramus, the possibility of applying a similar surgically-induced fracture for correction of facial deformities occurred to him. Subsequently, he endeavoured to work out a technique whereby a split of this type could be reasonably well forecast and controlled. As a result, he formulated a unique and versatile procedure which has subsequently undergone some minor modification by Dal Pont,¹⁴ one of his co-workers.

Obwegeser described the operation in detail and reviewed the results of a series of cases in Washington in 1966 at a meeting of the American Society of Oral Surgeons. At first the "Obwegeser" procedure engendered considerable enthusiasm on the North American continent but this has declined with the passage of time.¹⁵⁻¹⁷ Disadvantages and complications have become apparent¹⁵⁻¹⁷ and we can now make a more objective appraisal in the light of clinical experience.

Clinical aspects of the sagittal splitting technique

Diagnosis and treatment planning for surgical correction of a maxillo-mandibular deformity should be uniform, irrespective of the particular technique selected. This involves cephalometric analysis, model surgery, photography, tracing projections, template manipulations and formation of a plastic occlusal wafer, all of which are essential and routinely used adjuncts to the procedure. Radiographs should include not only the usual full mouth survey and routine views of the mandible, but also a base-vertex view of the skull. The new-

comer to sagittal splitting will soon learn that splintering, comminution and undesirable fracturing are constant hazards in the performance of the operation. Hovell¹⁸ has stated that the base-vertex view can be most helpful in case selection because it shows the thickness of the ascending ramus which is to be split (Fig 2). In his opinion, if a cancellous shadow is not visible between the two cortical plates this procedure should not be undertaken. In other words, if the lateral and medial cortical plates are virtually in continuity or "back-to-back" the chances of an uncomplicated split are slim. In that case, one simply reverts to the extra-oral approach. It is interesting to note that Steinhäuser,¹⁹ one of Obwegeser's former associates, does not agree with this premise and states that he has never encountered a ramus which is too thin for successful splitting. My own limited experience, based upon 10 splits, inclines me to agree with Hovell.

Blood should be typed and cross-matched in advance with a minimum of two units being ordered. Waite²⁰ calculates that a blood loss of 700 ml occurs during the average operation of this type, and this conforms with my own experience. Scaling and prophylaxis should be instituted well in advance, and hexachlorophene and water mouthwashes in 50:50 dilution should be used in order to reduce the oral flora. Arch bars or orthodontic appliances should also be placed pre-operatively in order to save time during the operation.

Infiltration of phenylephrine (Neosynephrine) 0.5 mg per 10 ml saline into the site of operation in the soft tissues lateral and medial to the rami is helpful in improving haemostasis during the operation. An incision is made through the muco-periosteum from the retromolar region of the mandible at the external oblique line, posteriorly and laterally upward along the ascending ramus toward the coronoid process, but stopping sufficiently short of the latter to preclude herniation of the buccal fat pad into the wound. This same incision is carried forward along the buccal shelf on the facial aspect of the mandibular molar teeth as far as the bicuspid region, subsequently angling downward and forward toward the flexure of the vestibule. It is most helpful when closing the wound if this incision is kept at least 4 or 5 mm lateral to the gingival margin. Using a periosteal elevator (Fig 3b), the soft tissues on the entire lateral aspect of the ramus and on the medial side of the ramus superior to the lingula are elevated. A channel retractor (Fig 3c and d) is then manoeuvred posteriorly along the medial aspect above the lingula until it engages the posterior border of the

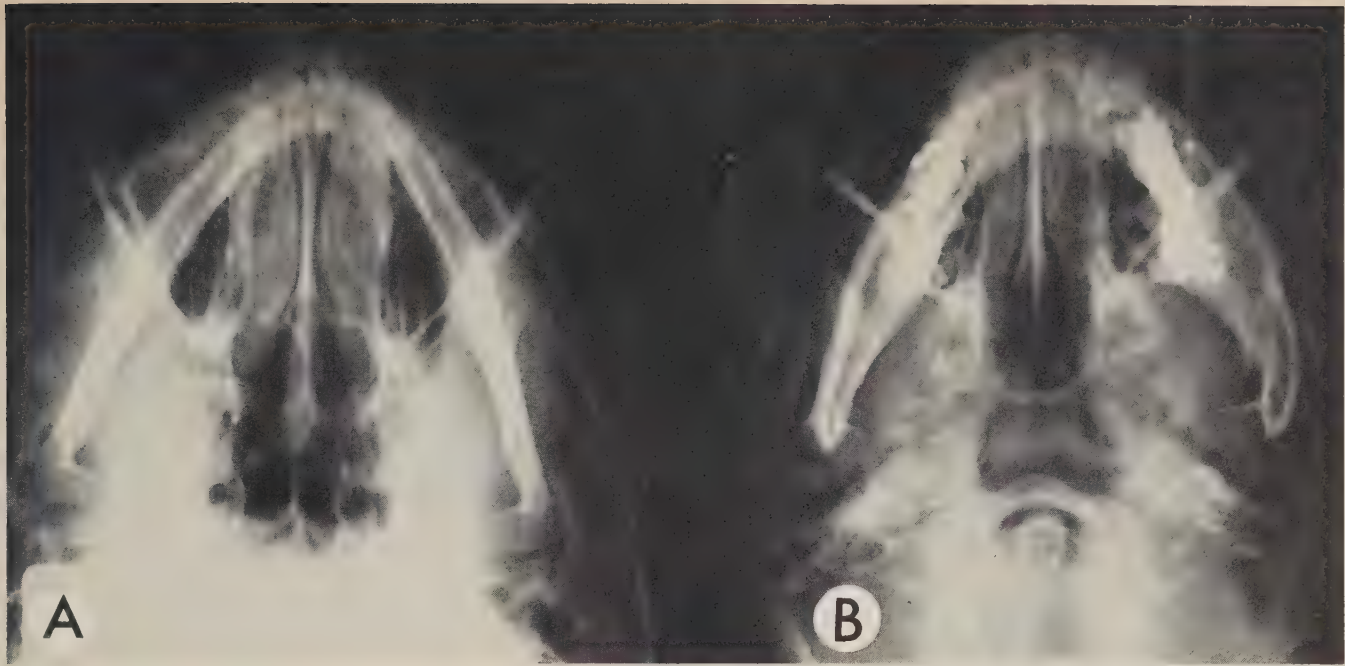


Fig 2 Base vertex skull radiographs, showing apparent apposition of the two cortical plates of the ascending ramus of the mandible (A), and the presence of a cancellous shadow separating them (B). The latter situation is more likely to be associated with a favourable split during the operation and should be taken into account during case selection. (Observe asymmetry of the two rami in (B).)

ramus of the mandible (Fig 4). It is very important for this retractor to be as low as the inferior alveolar neurovascular bundle will permit. With the soft tissue on the medial side of the ramus well retracted and with good light, a Lindemann bur, or one of similar type, is used to make a horizontal cut as low on the medial side of the ramus as can be safely accomplished (Fig 5). Obwegeser's original description involved the making of a depression cut for access on the internal oblique ridge at the level of the intended medial cut before making the bony incision. This can easily be done with a vulcanite bur, greatly improving the visibility of the anatomy deep to the anterior border of the ramus and facilitating the bony incision. This medial horizontal cut should be through the medial cortex and the spongiosa, stopping just short of the lateral cortex.

A vertical bony incision is next made at the level of the mandibular second molar, on the lateral side down to the inferior border of the mandible, as deep as the adjacent dental anatomy will safely permit (Fig 6). Next, using a No. 8 round carbide bur or a No. 703 cross-cut fissure bur, these two cuts are joined by a bony incision along the anterior border of the ascending ramus. This latter cut should be made as deep as the mandibular canal anatomy will allow, usually about 1 cm. The special curved periosteal elevator (Fig 3a) is then placed around the posterior border of the ascending ramus via the lateral aspect and worked in such fashion as to free the periosteum as much as possi-

ble along the entire posterior and inferior borders.

Bi-bevel chisels are now placed in the bony incision along the anterior border of the ascending ramus. Although Obwegeser has developed special 10 and 20 mm chisels (Fig 3e) for this purpose, any good stainless steel chisel of sufficient width will suffice. It is important, however, to use as wide a chisel as the patient's bony anatomy will permit in order to achieve maximum effect from the splitting forces and to minimize the tendency for any splintering to occur. Initially, a mallet is used to tap the chisel into the depth of the spongiosa, aiming for the medial surface of the lateral cortex. Once resistance is encountered, another similar chisel is placed into the bony cut and this chisel is tapped in similar fashion. This manoeuvre is continued in alternating fashion from one chisel to the other but, instead of using the mallet, hand pressure only is used as deeper entry is gained into the bone. Twisting of the osteotomes facilitates the split, while at the same time helping to preserve the contents of the mandibular canal. With the split thus accomplished, a similar procedure is carried out on the contralateral side.

Next, the periosteum along the posterior and inferior borders of the ascending ramus is incised by means of a sharp scalpel. Release of this periosteal band releases the pterygo-masseteric sling and thereby imparts more mobility to the distal fragment, a procedure which assists in minimizing any tendency for relapse. The new occlusion is then established.

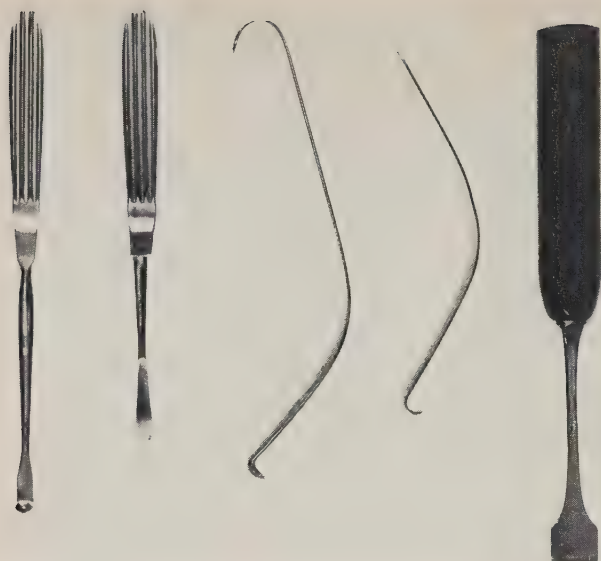


Fig 3 Instruments, from the left (a) specially curved periosteal elevator used for manipulation along the posterior and inferior borders of the mandible; (b) routine periosteal elevator; (c) and (d) channel retractors; and (e) special 20 mm chisel developed by Obwegeser.

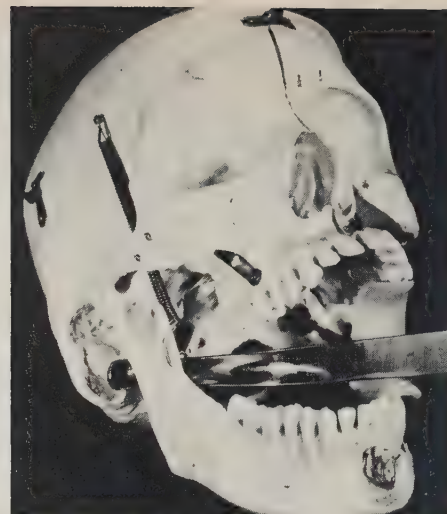


Fig 4 The position of the channel retractor after it has been manoeuvred posteriorly along the medial aspect of the ascending ramus above the lingula until it engages the posterior border.



Fig 5 Site of the horizontal cut, made as low down on the medial side of the ramus as can safely be accomplished and still remaining above the lingula.

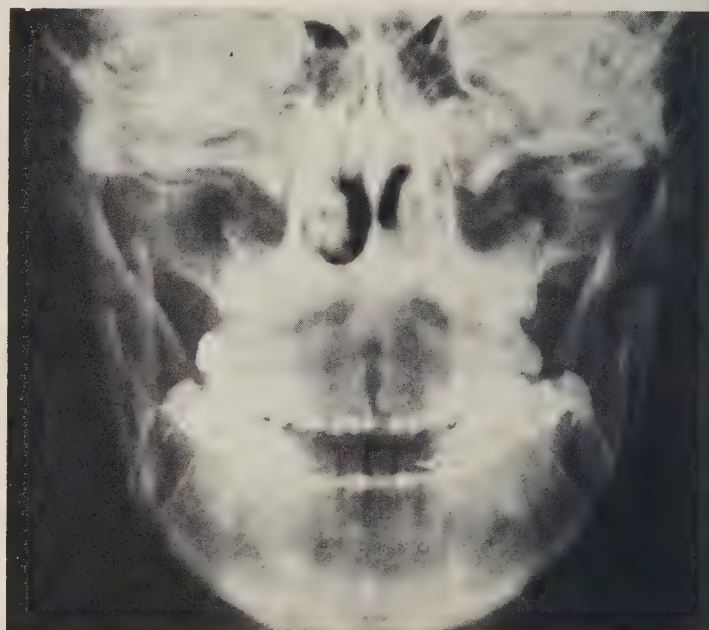


Fig 7 Radiograph showing circumferential wiring of the fragments after the mandible has been split.



Fig 6 Site of vertical incision at the level of the second molar on the lateral side of the mandible.



Fig 8 Plastic occlusal wafer used to obtain good stabilization and fixation.

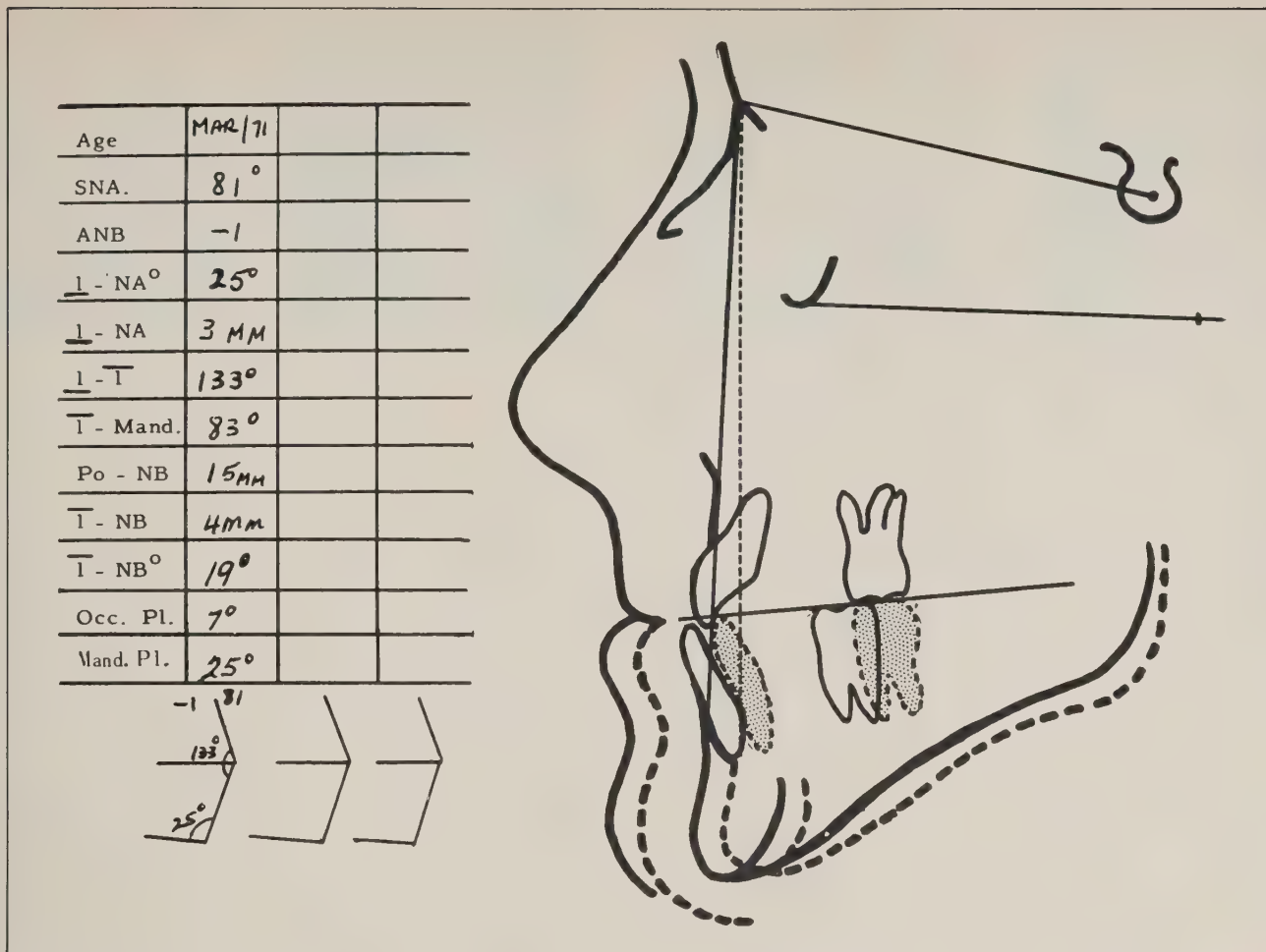


Fig 9 Cephalometric analysis records permit pre- and postoperative comparisons, and done at six month intervals will demonstrate any measurable relapse.

In circumferential wiring, the passing awl should now be used to fashion a wire around the split mandible at the angle, behind the last molar. My experience has led me to favour Obwegeser's recommendation involving circumferential wiring since it allows excellent securing and apposition of the fragments (Fig 7). At the same time, it provides a suitable means of trapping any large splinter or fragment of bone which may have to be used as a free graft if the split has been complicated by fragmentation. The two circumferential wires are not tightened at this stage but simply allowed to rest loosely with their ends secured by forceps.

The oropharynx is next cleared of packing, blood and debris. The position of the distal fragment is again checked and the desired occlusion is established by means of the plastic occlusal wafer (Fig 8) which was prepared pre-operatively and is important in obtaining good stabilization and fixation. Intermaxillary fixation is then instituted, the surgical wounds are debrided and the circumferential wires are tightened. Finally, the depths of the wounds are rinsed with tetracycline solution and the soft tissues are closed with continuous No. 4-0

plain gut sutures. Appropriate intravenous fluid therapy and close postoperative supervision are imperative.

Follow-up cephalometric analyses should be done as soon as convenient postoperatively and at six month intervals after the operation. This allows for objective and measurable monitoring of the posterior displacement of the mandible (Fig 9). Any significant relapse will likely be detectable in the six and 12 month postoperative measurements. Postoperative photographs will also provide a graphic aesthetic comparison for the patient's and the surgeon's gratification (Fig 10).

Comparison of bilateral oblique osteotomy and sagittal splitting

Conventional bilateral oblique osteotomy of the mandibular rami remains a good operation for correcting certain cases of mandibular prognathism.²¹ It is done by an extra-oral approach beneath or behind the mandibular angle. The incision is short and relatively inconspicuous. Direct access and



Fig 10 (a) and (b) preoperative; (c) and (d) postoperative clinical photographs.

good visibility are obtained when making the bony incision and residual paraesthesia is uncommon. Bleeding is usually minor and rarely requires replacement therapy unless the bone cut is made too far forward. Once the bone fragments have been repositioned, they often do not even require wiring because of the highly favourable vector of contracting force of the external pterygoid muscle on the proximal fragment. The operating time is usually under two hours.

The sagittal splitting technique provides a strong contrast. Firstly, this operation is entirely intra-oral, which automatically reduces accessibility and visualization. The required retraction exerts tremendous tension on the very sensitive vermilion border of the lips and the skin of the adjacent cheeks and often results in significant maceration. The overhead operating room light is inadequate to penetrate into the depths of the masticator space and use of a good headlight by the surgeon is mandatory.

Potential complications resulting from sagittal splitting are numerous. The neurovascular bundle entering the mandibular foramen is often traumatized due to one of two potential causes. The very important medial placing of the channel retractor on the ascending ramus frequently impinges upon the inferior alveolar nerve and stretches it. Alternatively, if the split is unfavourable and does not occur sufficiently lateral to leave the inferior dental canal and its neurovascular bundle completely in the distal fragment of the mandible, then the inferior alveolar nerve will be directly traumatized. Therefore, paraesthesia is the rule rather than the exception following this operation.

An all-important feature of the sagittal splitting procedure is the release of the pterygo-masseteric sling, which requires partially blind manipulation of a specially curved periosteal elevator along the posterior and inferior borders of the ramus of the mandible, as well as an incision of the periosteum in these same areas. Using a sharp No. 15 blade in

the darkness of the retromandibular anatomy, close to the retromandibular vein and the external carotid artery, is a hazardous procedure, and section of the periosteum in this situation requires careful preparation and execution. This is because immediate bleeding from the vascular periosteum precludes visualization for any second attempt. In addition, although the very large expanse of exposed cancellous bony surface which follows the split improves the healing potential, it also results in a persistent oozing of blood and unquestionably accounts for increased bleeding.

Probably the most disconcerting feature of the operative procedure, however, is the unpredictable line of the final split. Ideally, one would hope that it would go directly to the posterior border of the ascending ramus but this is rarely the case due to the vagaries of chance and individual anatomical variation. Obwegeser's instruction to keep the chisel directed laterally, parallel to the flare of the ramus, is extremely pertinent in this regard.

Finally, postoperative oedema is often extremely marked and the surgeon is frequently concerned that the visible external nuchal and facial oedema may reflect equivalent conditions internally within the lateral pharyngeal spaces. Various measures which have been employed in an effort to minimize this aspect include continuous in-dwelling catheter suctioning, routine gravity drainage, corticosteroids, pressure dressing and ice collars. Despite an admittedly dramatic external swelling in the 48 hours immediately following the operation, in my experience this has not posed any serious threat to the patency of the airway.

Summary

The sagittal splitting technique of Obwegeser is a useful, versatile, challenging though difficult procedure. However, it is relatively inaccurate and uncontrolled when compared to most other bone surgery which the specialty of oral surgery encom-

passes. It is a longer operation but one which runs less risk of non-union than any of its contemporary counterparts. Greater blood loss can be expected but should not be a problem provided that it is anticipated and the usual precautions are taken. Swelling also is greater but extra-oral scarring is avoided. Intelligently applied, with adequate planning, instrumentation and comprehensive preparation, this procedure can be helpful in the surgical management of maxillo-mandibular malrelations.

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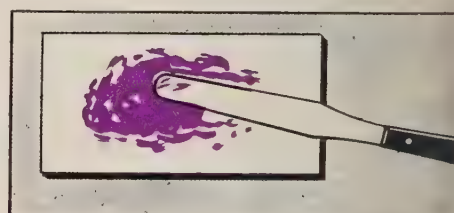
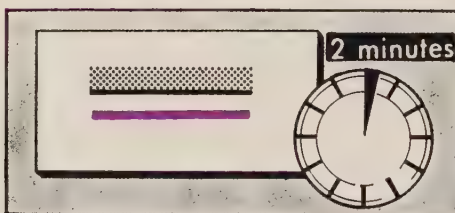
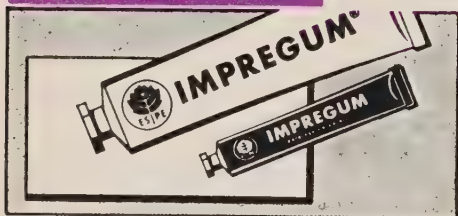
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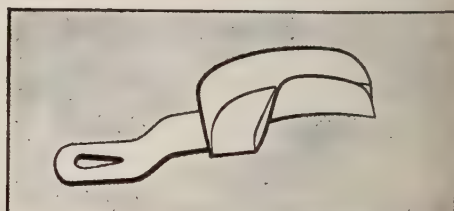
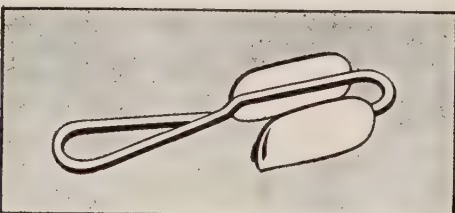
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The Sioux Lookout dental care project: a progress report

K.C. Titley, BDS, LDR RCS (Eng), Dip Paed
Toronto

The following article describes how a dental service to Indian residents of an isolated region of northwestern Ontario has progressed during the past three years and sets new goals for the future.

L'article suivant expose l'évolution d'un service dentaire pour les Indiens des régions isolées du Nord-ouest de l'Ontario durant trois années d'activités et il détermine de nouveaux objectifs pour l'avenir.

The evolution of the Sioux Lookout dental care project whereby the Hospital for Sick Children in Toronto in conjunction with the federal government provides dental services for the Indian residents of an isolated region in northwestern Ontario has been described by Davey.¹ The purpose of this paper is to indicate the progress we have made

since the inception of the project three years ago, the problems we have encountered in delivering such a unique service and to suggest what our eventual goals will be.

Delivery of service

We have three fully portable field units each comprising a Midwest Customair III unit, an AVS suction unit, fully equipped instrument cabinets and surgical kits, a portable compressor and all necessary supplies to deliver restorative, surgical, denture and preventive services. At the moment we have two dentists resident in the zone who are attached to the Zone Hospital. The majority of their time is spent in the field providing dental services at the nursing stations and their satellites. The third unit is manned by interns from the Toronto hospitals who rotate through the zone on a monthly basis. The hospitals providing this intern service are the Hospital for Sick Children, the Toronto General Hospital and the Toronto Western Hospital. At times when interns are not available we have graduate students from the University of Toronto, Faculty of Dentistry, again on a monthly basis (Table 1).

Total dentist days in the field and the composition of dental staff in the years 1971 and 1972 Table 1

	1971	1972
Total dentist days in the field	583	667
Residents	2 (from July)	2 (Jan-July) 2 (Sept-Dec)
Interns	9	11
Graduate students	8	6

Summary of patient appointments, restorations, extractions and clinic hours for the years 1970, 1971 and 1972 Table 2

	1970	1971	1972
No. of patient appointments	4,658	5,937	5,321
Restorations	2,620	5,056	4,996
Extractions	4,773	4,624	3,221
Clinic hours	2,279.25	3,520.5	3,858.75

Operating costs of the Sioux Lookout dental care program for the fiscal years 1971-1972 and 1972-1973 Table 3

	1971-1972	1972-1973
Salaries	\$42,000	\$53,000
Dental care	\$17,100	\$ 7,700
Dental supplies	\$ 5,300	\$ 6,800
Equipment	\$ 500	—
Transport	\$10,000	\$74,900
Total	\$77,500	\$74,900
Mean Total	\$76,000	

A month has been selected as the most economical unit of time for visiting personnel to work at the nursing stations and their satellites. The dentist and his equipment have to be flown out of Sioux Lookout either in specially chartered aircraft or, whenever possible, on the charter companies' scheduled flights which visit most nursing stations

twice a week. We are, of course, very dependent on the weather since all flying is visual and fairly frequent delays are encountered. The records for 1971 and 1972 indicate that we have managed to increase our "dentist days" in the field from 583 in 1971 to 667 in 1972, an increase of 12.5 per cent (Table 1).

Although we have a fully equipped dental surgery at the Zone Hospital, our treatment impetus has been aimed at delivery of service in the field so that coverage for in-patients has been minimal and only provided when the dentists are between field trips. Ideally, we would like to see four full-time dentists in the Sioux Lookout Zone so that hospital coverage may be provided on a weekly rotational basis. In this way our three field units and the Zone Hospital unit would be kept fully operational.

Range of dental services provided

The field equipment is capable of producing the same ranges of dental care as a patient may expect to receive at a dentist's private office. Treatment priorities, however, dictate the limited range of services we are able to provide at the present time. During 1970, our first year of operation, we extracted almost twice as many teeth as we restored. In 1971, although the number of extractions remained about the same, the number of teeth restored almost doubled. In 1972 the number of teeth restored dropped slightly but the encouraging point to note is that during this period the number of extracted teeth fell by approximately 31 per cent. During this three year period the number of clinic hours has steadily increased (Table 2).

The restorative services we provide include amalgam, silicate and composite resin restorations and stainless steel crowns. In addition, a limited amount of endodontic treatment and formocresol pulpotomies on primary molars have been done. We have no accurate record of denture services provided because of the time involved in their construction. A denture may be started but may not be completed and delivered to the patient until several months have elapsed and a dentist revisits the community. Because they are more time-consuming, the addition of stainless steel crowns and the use of pins in complex restorative procedures is probably responsible for the slight decrease in restorative procedures in 1972.

The dentists have devoted much time and effort to education and prevention of dental disease in the communities they visit. This aspect of our pro-

gram, however, is at best sporadic because of the time required for treatment of active dental disease. A viable preventive program with suitable staffing is one of our leading priorities.

Cost of the program

Money to pay for medical and dental care rendered to the Indians in the Sioux Lookout Zone comes from a federal government budget appropriation of \$2.3 million. In view of the uniqueness of our method of delivery of service it is interesting to note the cost per annum of providing dental treatment to the Indians at the nursing stations and satellites. The initial capital expenditure for equipment was made in 1969 and 1970 so that the figures we are examining here are the operating costs of the program for the fiscal years 1971-1972 and 1972-1973 (Table 3).

The dental care item refers to fees paid to general practitioners for treatment of grade 8 students to render them dentally fit before they depart to schools in the South for higher education. Our treatment priorities in 1970 and 1971 were aimed at this age group and appear to have been effective by reducing this amount by 55 per cent.

There are 10,000 Indians in the zone who are eligible for dental services and the average per capita cost has been \$7.62 per annum over a two year period. Alternatively, the cost to the federal government on an appointment basis has been \$13.53 per appointment. In view of the unique method of delivery of dental services this cost is more than reasonable. As far as possible, when a dentist visits a nursing station or satellite, he tries to complete treatment for all the patients on whom restorative dentistry is undertaken. At the same time all emergency care required by the community is rendered.

Organization and equipment maintenance

The scheduling of dental visits to nursing stations and satellites is organized through the office of the Medical Zone Director, Dr. G. Goldthorpe, in consultation with the senior resident dentist. Visits by interns and graduate students are initially organized in Toronto and the list is then sent to Sioux Lookout where the decisions to locate field personnel are made. The visiting dentists spend two or three days at the Zone Hospital where they are instructed in setting up their field equipment and also treat in-patients at the hospital. They then spend three weeks in the field carrying out dental

treatment and, weather permitting, return to the Zone Hospital where they render further care to in-patients while their equipment is checked and re-stocked for the next dentist. The resident dentists have a similar schedule except that their field trips may be longer.

So far it has not been possible to arrange regular biannual visits to each nursing station or satellite because of the uneven demand for treatment. Requests for a dentist by the communities are evaluated with respect to their urgency by the Zone Director, and a dentist is then sent. As more people receive dental treatment, we anticipate being able to schedule regular monthly visits to each nursing station and satellite and hence implement a recall system.

The maintenance of our field equipment has been a continuing problem as it has to be sent to Winnipeg for repair. This causes gaps in our field coverage while equipment is in Winnipeg. We hope to train a maintenance man to look after this aspect of our program since it is more economical to send a man into the field to repair equipment than pay the freight charges for shipping equipment back to Sioux Lookout and then to Winnipeg, leaving a dentist non-productive during the interval. Our present budget does not allow for extra standby units.

The future of the program

Our present dentist to patient ratio of 1:3,300 in such an isolated area is far from satisfactory. A better situation would prevail if we had three dentists resident in the zone plus a rotating intern. The ratio of one dentist to 2,500 patients would enable us to treat existing dental disease more quickly.

One of our biggest costs has been the freight charges for moving equipment from Sioux Lookout to the nursing stations and satellites. We have found our compressors to be the heaviest item and are therefore purchasing some more so that they may be left at the nursing stations, thereby eliminating freight costs from Sioux Lookout. From now on compressors will be shipped from the nursing stations to the satellites as they are required. Our eventual goal is to have a complete set of field equipment at each nursing station, which would necessitate the purchase of at least four more portable units. If we attain this goal much of the time now lost transporting equipment could be spent in delivering dental service.

The provision of dentures has become a problem of increasing magnitude. Many members of the

teenage and adult population have been rendered totally or partially edentulous. At the moment dentures have to be sent to Winnipeg for processing which results in considerable delay in their delivery to a patient. The dentist may leave the nursing station or satellite before the denture is returned from Winnipeg so that it may be months before it is fitted. We are therefore examining the possibility of training and employing a technician to make this service more efficient.

At the moment we really have no idea of the magnitude of dental disease requiring treatment throughout the Sioux Lookout Zone. We are exploring the possibility of conducting an epidemiological survey of the zone using survey personnel who could provide simultaneous oral health education. The latter will be an important component of the program.

The dentists utilize any chairside help they can recruit when working in the field. This summer we are hoping to train Indians at the Zone Hospital in chairside assisting. This would enable us to have a nucleus of assistants resident in the field who could be called upon whenever a dentist visits their community. These people would also act as interpreters. Part of the proposed program will also involve the home care aspects of preventive dentistry. In this way we hope to make the Indian population in the zone more dentally aware.

Summary and conclusions

The progress of the Sioux Lookout Dental Care Project has been described. Over a three year program we have evolved an economic system of delivery of dental services to isolated communities in northern Ontario. The impetus of the program thus far has been aimed at the treatment of dental disease but the time has now come to educate the population in its prevention.

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Premature exfoliation of the teeth with hyperkeratosis of the palms and soles: Papillon-Lefèvre syndrome

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London, Ont

Papillon-Lefèvre syndrome is a rare disorder characterized by the early loss of teeth of both the primary and secondary dentitions and by hyperkeratosis of the palms and soles. These features account for the alternative name of palmo-plantar hyperkeratosis and juvenile periodontitis. The purpose of this article is to describe the occurrence of the syndrome in a family of five children and to emphasize that premature loss of teeth in children is a sign which should always be investigated.

Report of case

In July 1971, a 13-year old Caucasian female (E.P.) was seen on consultation because of loose teeth. The patient had already lost many of her teeth and the remainder were very loose because of the severe bone loss (Fig 1). The gingiva was acutely inflamed, hyperplastic and haemorrhagic. She also exhibited moderate hyperkeratosis of the palms and soles with accentuated surface creases (Fig 2). According to the parents, the skin lesions first had appeared at six to eight months of age and the gingivitis was noticed two years later. She had lost her teeth over the years because of progressive breakdown of the periodontium.

The family consisted of five children, all of the present marriage. There were three daughters (J.P., E.P., L.P.), aged 14, 13 and nine years and two sons (R.P. and J.P.), aged three years and nine months respectively. There were no significant features in the medical histories of any of the children and the parents denied any consanguinity.

The eldest daughter (J.P.) had been edentulous for one year. Apparently, the parents first had noticed the gingivitis at about the age of 18 months, while the cutaneous lesions, which consisted of moderate scaliness of the palms and soles, had become apparent at 13 years.

The 9-year old sister (L.P.) had lost all her primary teeth. She exhibited severe gingival inflammation (Fig 3). A panoramic radiograph revealed severe bone loss around the erupted permanent incisors (Fig 4). At this visit she had no obvious palmar or plantar changes. The parents stated the oral lesions first appeared at 18 months of age.

The 3-year old boy (R.P.) exhibited neither oral nor cutaneous lesions. The infant (J.P.) had no erupted teeth as yet and did not exhibit skin lesions.

Neither of the parents had ever had the oral and cutaneous lesions seen in their children nor were they aware of any similar conditions in their families.

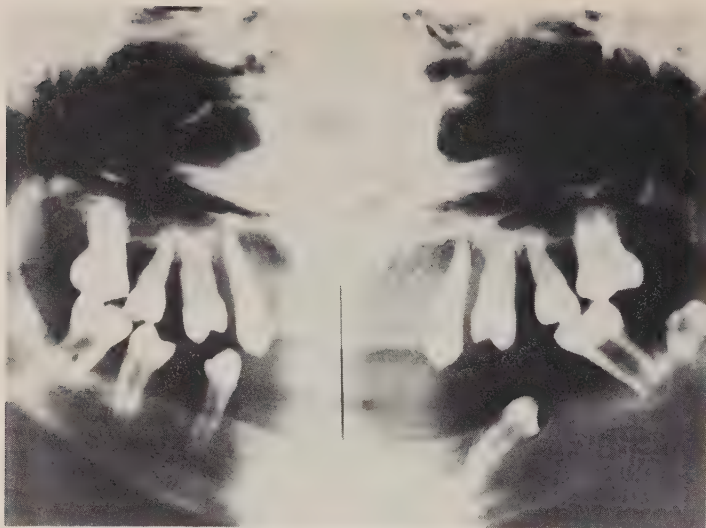


Fig 1 The proband (E.P.) at age 13 (July 1971) had already lost many of her teeth and there was severe bone loss around those remaining.

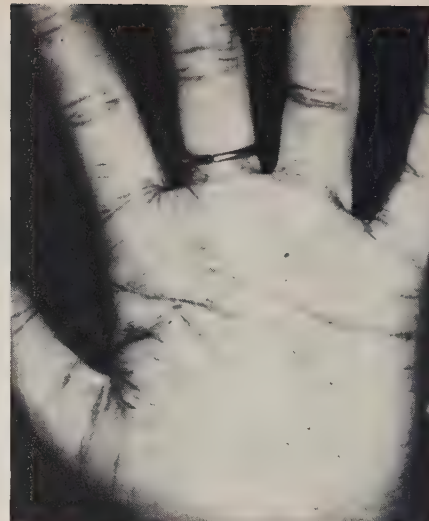


Fig 2 The proband's hands (July 1971) exhibited moderate hyperkeratosis with accentuated surface creases.

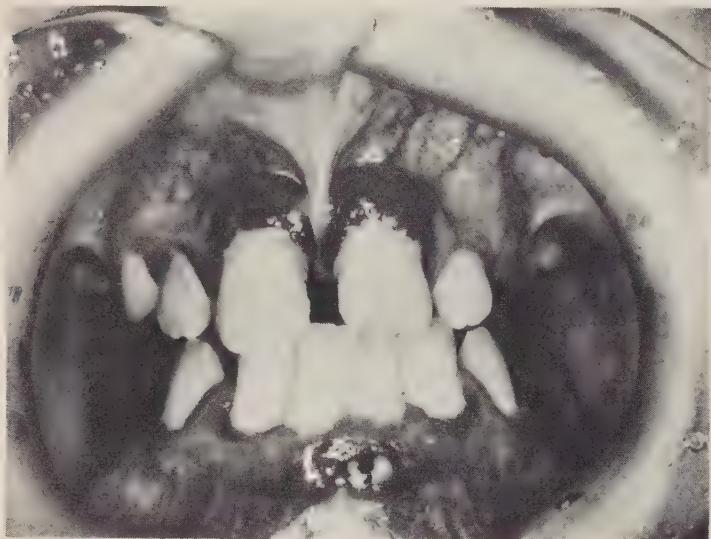


Fig 3 The proband's younger sister (L.P.) at age 9 (July 1971) had lost all her primary teeth and exhibited severe gingivitis.

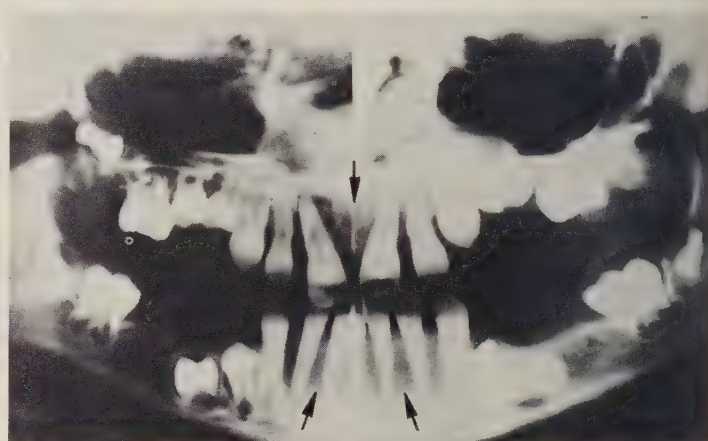


Fig 4 Panoramic radiograph of L.P. (July 1971) revealed severe bone loss around the permanent incisors.

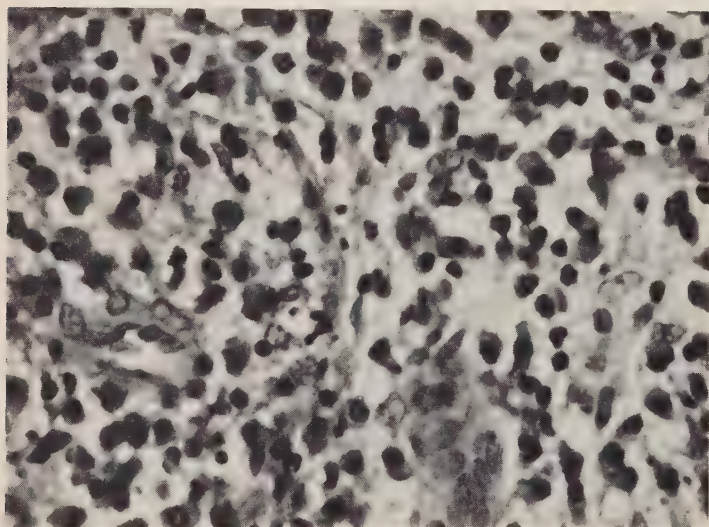


Fig 5 Photomicrograph of gingival tissue from E.P. removed at the time of extraction (June 1972) of the last remaining teeth of the proband. An intense chronic inflammatory cell infiltrate is present. Haematoxylin and eosin. Original magnification x 680.

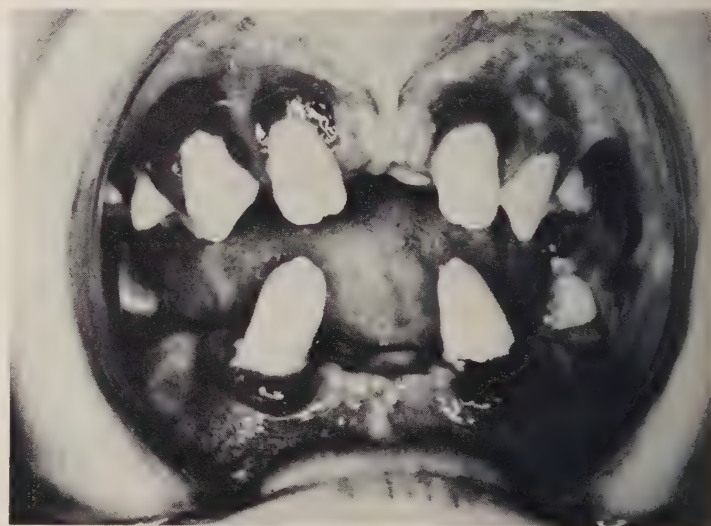


Fig 6 In June 1972, 11 months after the first visit, the proband's younger sister had lost the maxillary central incisors and mandibular central and lateral incisors. The gingiva was more severely affected. The progression of the disorder can be judged by comparing Figs 3 and 6.

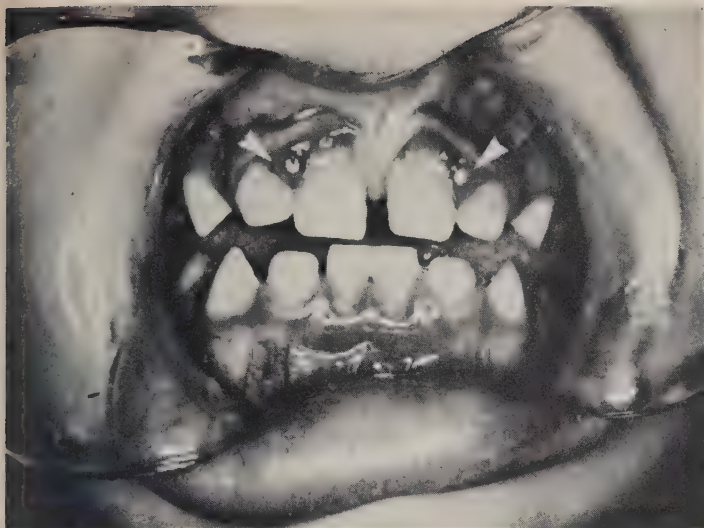


Fig 7 In June 1972, at 20 months of age the youngest child (J.P.) possessed a complete dentition but already exhibited moderately severe marginal gingivitis.



Fig 8 Also in June 1972, J.P.'s soles were markedly hyperkeratotic.

The diagnosis of Papillon-Lefèvre syndrome was made. The nature of the condition, including its hereditary aspects, was explained to the parents. They were advised that periodic prophylaxes should be performed and good oral hygiene maintained in an attempt to delay the inevitable loss of teeth. The parents also were informed that little could be done about the skin lesions, although symptomatic treatment by a dermatologist might be considered.

The family was re-examined in June 1972. The proband (E.P.) was now 14 years old and edentulous except for an unerupted mandibular third molar. Her last few teeth had been extracted a few weeks previously and some of the associated periodontal tissue was submitted to the University of Western Ontario Oral Pathology Biopsy Service for investigation. The histologic appearance of the tissue was typical of severe periodontitis as found in individuals unaffected by Papillon-Lefèvre Syndrome (Fig 5). There was an intense chronic inflammatory cell infiltrate in which plasma cells predominated, the crevicular epithelium was proliferating, and bacterial colonies of dental plaque were present. The patient's hands and feet had an appearance similar to that of one year previously.

The disease process had progressed in the third daughter (L.P.) so that the maxillary central incisors and the mandibular central and lateral incisors were now missing (Fig 6). The gingival tissue was red, swollen and oedematous, had a marked tendency to bleed, and could be reflected, exposing the furcations of the remaining molars. All the remaining teeth, especially single-rooted ones, were quite mobile. Skin lesions had developed since the previous examination and were

similar to those of the proband, although not as marked.

The older son (R.P.) still exhibited neither oral nor cutaneous lesions. The younger son (J.P.), who was now 20 months old, possessed a complete primary dentition but already exhibited moderately severe marginal gingivitis (Fig 7). This had been noticed first at one year of age. His palms and soles exhibited hyperkeratosis (Fig 8) but were less severely affected than were those of his sisters. Involvement of the skin apparently had commenced at nine months. Because calcification in the falx cerebri has been reported,^{1,2} PA and lateral skull radiographs were taken of all five children, but no ectopic calcification in any of the subjects was found.

Discussion

Papillon and Lefèvre³ described the rare condition which bears their names in 1924. Since then numerous case reports⁴⁻¹³ have been added to the literature and in a comprehensive review by Gorlin and his colleagues¹ it was estimated that there may be 180 cases in the USA.

The development and eruption of the primary dentition is normal but the gingiva generally becomes red and oedematous, with a marked tendency to bleed, at about the same time as the palms and soles become hyperkeratotic. This simultaneous development of oral and cutaneous lesions apparently did not occur in all the affected children in the present family. Destruction of the periodontal tissues commences as soon as the teeth erupt and progresses until the entire primary denti-

tion is lost by age four or five. Once the primary teeth have been lost the inflammation subsides until the permanent teeth erupt, at which time the process is repeated. Eventually, the alveolar bone becomes markedly destroyed and the patient becomes completely edentulous except for the third molars, characteristically at about 16 years. The alveolar mucosa becomes normal once the permanent teeth are lost.

The hyperkeratosis of the palms and soles usually is not severe, the soles generally being the more severely affected. The cutaneous lesions tend to be more marked during the winter and during the most severe stages of the periodontal involvement.

Treatment is focused on attempts to slow down the inevitable tooth loss. Scrupulous oral hygiene should be practised with periodic professional cleaning. As the teeth are lost dentures should be constructed and then altered or remade as the jaws become larger and as more teeth are exfoliated. The skin lesions which persist even after the patient is rendered edentulous, may be treated symptomatically.

There is good evidence to indicate that the syndrome is inherited as an autosomal recessive trait. In this mode of inheritance both abnormal genes must be present before an individual exhibits the condition, that is, he or she must be homozygous for the abnormal allele. Both parents of an affected individual carry the abnormal allele but in single dose and are therefore heterozygous. Consequently they do not exhibit the syndrome. Provided an affected individual does not marry another heterozygote, which is unlikely unless he or she marries a close relative, none of his children will exhibit the condition although each will have a 50 per cent chance of being a heterozygote. Likewise, an unaffected child of two heterozygous parents has a two-thirds chance of being a heterozygote himself or a one-third chance of being homozygous for the normal allele. The unaffected son of the present family is such an example.

Premature loosening or exfoliation of teeth in children should be investigated thoroughly. Although a direct blow or a periapical abscess are the most obvious causes of precocious loosening of individual teeth, a variety of benign and malignant neoplasms and conditions such as the central giant-cell granuloma also must be considered. Generalized looseness or premature loss of teeth may be caused by histiocytosis X, leukaemia, dentinal dysplasia, hypophosphataemia, hypophosphatasia, cherubism, juvenile diabetes, neutropenia, bruxism, acrodynia, and, as in this family, Papillon-Lefèvre syndrome.

Summary

A family in which premature loss of teeth in the children led to the diagnosis of Papillon-Lefèvre syndrome has been described. Premature loss of teeth in children may have a systemic cause, or be caused by tumours, and always should be investigated. Dentists should have a basic knowledge of genetics and be able to discuss hereditary aspects of dental disorders.

Dr. Gardner is professor and chairman of the Division of Oral Pathology and Dr. Johnson is associate professor and director of undergraduate periodontics in the Faculty of Dentistry, University of Western Ontario, London, N6A 3K7. Address reprint requests to Dr. Johnson.

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ONTARIO — West End Toronto. Fully equipped and furnished dental office for rent in a modern medical clinic building, consisting of 4 operatories, nurse/receptionist station, private office and large waiting room. Central unit for gas analgesia fitted. Building fully air-conditioned, janitorial services provided, ample parking. Reply CDA Box No. 1227.

ONTARIO — Burlington. General practice, fully-equipped for intravenous and inhalation anaesthesia. Set up for left-handed operator, office includes two fully equipped operatories and a potential third. For more information please contact Dr. J.J. Corrigan, 761 Brant St., Burlington, Ontario. 1-416-634-8039.

ONTARIO — Mimico. Office space suitable for dentist. Presently occupied by dentist leaving town. Will be available December 1973. Modern, air-conditioned professional building on Lakeshore Blvd. W., Mimico. Reasonable rent. Reply CDA Box 1340.

ONTARIO — Deep River. Dental practice. Owner retiring after 25 years in present location. Two operatories fully-equipped (1 S.S. White, 1 Ritter); x-ray, 1 equipped lab; Cavetron unused. Situated in the middle of the Upper Ottawa Valley (town of Deep River). Hospital appointment available. Specially zoned commercial property available for clinic, offices, apartments or residence. Alternately 4-bedroom house available with adjoining property suitable for construction of clinic if desired. Contact Dr. E.G. Sinclair, office: 613-584-2151; residence: 613-584-3784.

ONTARIO — Hamilton. 47 year old practice. Prosthetics, oral surgery, general anaesthesia. Can be easily expanded to include general practice and a dental therapist to participate in the low cost denture program. C.S. Watters, 218 Medical Arts Bldg, Hamilton, Ont. 416-527-3032.

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ALBERTA — Grande Prairie. City of 15,000, 275 miles northwest of Edmonton. Serves area of 50,000 with new pulp mill just opened. Excellent hunting, fishing, educational and recreational facilities. Practice of 11 years in association with another dentist who is remaining. Completely equipped. Three operatories, lab, private office and business area. Share waiting room and hygienist. Can be leased or bought. Very reasonable. Reply CDA Box No. 1326.

ONTARIO — Kingston. Drawing area of 80,000 plus. Modern cedar panelled, 3-bedroom bungalow. Dental office, with private entrance in lower level. Located in residential area. Active practice — no successor. Owner moving to smaller community. Contact: Dr. R.M. Werry. Office: 613-542-7204. Residence: 613-542-2221. 1134 Johnson St., Kingston, Ontario.

ONTARIO — Toronto. Dental office for rent in new plaza. 11,000 square feet. Large enough for 2 dentists or small clinic. Yonge St. north of Steeles Ave. Bus route. Good residential area. Available immediately. Tel: 416-463-5957.

ONTARIO — Toronto. Albion and Islington Road. Suitable for dentist fully partitioned 580 square feet. Plumbing installed. Other areas also available. Tel: 741-3104. Mr. Kleinberg.

ONTARIO — Toronto. Dental office for rent. Shopping centre, Bloor-Islington Area. Walking distance to subway, serving good middle income residential area. No dentist office close by. Previously used as medical suites and allergy laboratory. 1360 square feet. Fully air-conditioned, divided to waiting room and 3 double examination rooms. Immediate occupancy. 231-1362 or 233-5308. Sendro Enterprises Ltd. P.O. Box 245, Toronto 18, Ont.

QUEBEC — Montréal. Centre-Ville, cabinet dentaire disponible, pour pédodontiste, orthodontiste, omni-praticien, avec un groupe de dentistes. Tél: 514-849-7774.

OPPORTUNITIES WANTED

BRITISH COLUMBIA — Vancouver. Recent graduate currently working in Vancouver, wishes to purchase dental practice from retiring dentist in Vancouver or Greater Vancouver area. Reply Box 35537, Postal Station E, 2021 West 42nd Ave., Vancouver 13, B.C.

OPPORTUNITIES AVAILABLE

BRITISH COLUMBIA — Richmond. Excellent opportunity to enter expanding family practice in rapidly growing suburb of Vancouver. Young, experienced dentist preferred. Intention is to share my practice with the right individual. Serious inquiries only. Reply CDA Box No. 1311.

MANITOBA. An appointment for one full-time position in the Section of Prosthodontology is available in a Canadian University. Rank and salary related to qualifications and experience. Limited practice time available. Reply CDA Box No. 1337.

ONTARIO. Family dentist urgently required, serving population of 5,000. 27 miles east of Kingston, Thousand Islands district. Modern medical centre available June 15. Area declared underserved by Department of Health. Incentive grant available. Farming, industrial, tourist area with excellent educational and recreational facilities. Write: St. Lawrence District Medical Centre, Box 102, Lansdowne, Ont.

ONTARIO — London. The Southwest Middlesex Health Centre invites applications from dentists for a *full-time position* as a member of a health team, including physicians, nurse practitioners, public health workers, and other health personnel, to provide total patient care in a rural area. The dentist will be required to provide a full range of comprehensive dental services, with the assistance of auxiliary personnel who will be under his direct supervision.

The salary plus fringe benefits will be negotiable, in keeping with the previous background and experience of the applicants, and salaries that are offered for similar positions. The appointment would be for a minimum of at least five years. The position includes an affiliation with the Faculty of Dentistry, University of Western Ontario.

Applicants must possess a license to practice in Ontario and display an aptitude for innovation, teaching, research and administration.

Typed applications, including a curriculum vitae and the names of at least two references, should be submitted to: Department of Social Dentistry, Faculty of Dentistry, The University of Western Ontario, 1151 Richmond Street, London, Ontario, N6A 3K7.

ONTARIO — London. Applications are invited for the post of Assistant or Associate Professor in the Department of Oral Medicine, tenable from September 1974.

Duties can be varied according to the candidate's qualifications as the Department incorporates divisions responsible for the teaching of Oral Medicine, Oral Diagnosis, Periodontology, Radiology and General Medicine.

Applications, giving full details and names and addresses of three references should be sent to: Dr. R.I. Brooke, Professor and Chairman, Department of Oral Medicine, Dental Sciences Building, University of Western Ontario, London, Ontario.

ASSOCIATESHIPS AVAILABLE

ALBERTA — Peace River. High volume, high income practice requires one-two associates. Large new office, six operatories, located in the modern growing town of Peace River. Population 6,000, drawing area of 60,000, two dentists. Tremendous community spirit, all services, recreational facilities, excellent hunting. Ideal for recent graduate wishing an instant, productive, rewarding quality practice with no financial outlay or experienced dentists wishing a more rewarding practice and mode of living. Contact Dr. G.R. (Bob) Sandercock, Box 1798, Peace River. Tel: 403-624-1646.

BRITISH COLUMBIA — Burnaby. Associate required immediately for busy Vancouver area group practice. Possible view to eventual partnership. Reply, stating experience, to CDA Box No. 1338.

ONTARIO — Ottawa. South. Associate desired for general practice. Completely renovated office. Opportunity available immediately. Reply CDA Box No. 1237.

ONTARIO — Niagara Falls. Associate required for modern clinic in Niagara Falls. For more information, call Dr. Bernard Blackstien, 416-354-5821 or evenings, 416-358-8274.

ONTARIO. One or two associates required for a busy group practice which includes one hygienist at present. Associate(s) should be interested in endodontia and/or periodontia, but may develop own general practice. Tremendous opportunity for one wishing to relocate or a new graduate. Reply CDA Box No. 1339.

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BRITISH COLUMBIA — Duncan. Midwest American Tru-Torc Straight Handpiece for sale. Fully reconditioned. Reply Dr. A. van Hoek, 310 Brae Road, Duncan, B.C.

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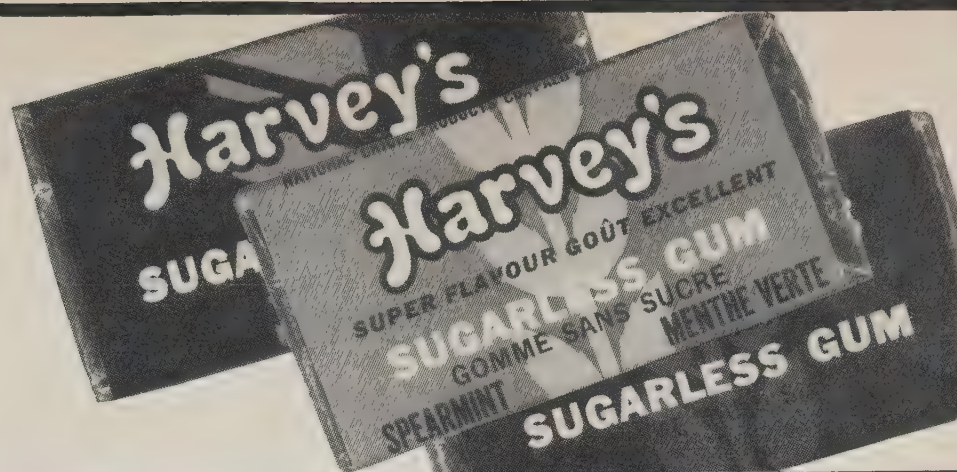
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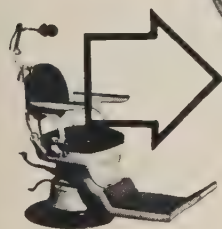


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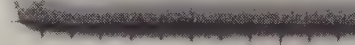
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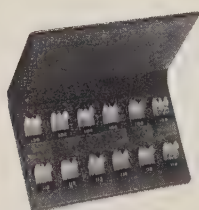
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Correction to CDA Retirement Savings Plan in November issue —
Should read: Common Stock Fund \$31.042.

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Announcements/Avis

Information about other meetings or courses, including American continuing education courses, may be obtained by writing to CDA headquarters.

Canadian Dental Association

1974 Windsor, Ont, Oct 2-5
1975 St John's, Nfld, Aug 17-20

Fédération Dentaire Internationale

1974 London, England, Sept 8-14
1975 Chicago, USA, Oct 26-30

Royal College of Dentists of Canada

Part I examinations (Basic Sciences) June 24, 1974. Applications and \$100 fee must be received before Mar 31, 1974.

Part II Examinations (Oral) Dec. 6-7, 1974. Eligibility is based on successful completion of the Part I Examinations, plus submission of required case histories, and the lapse of five years since the candidate began his graduate training. Written intent to sit this examination with \$100 examination fee must be received before Mar 31, 1974.

Application forms for the Part I Examinations and further information may be obtained from J. E. Speck, Secretary-Registrar-Treasurer, Suite 614, 170 St. George St, Toronto, Ont. M5R 2M8.

Canadian Meetings

Vancouver & District Dental Society, at Hotel Vancouver, Vancouver. Dec 7-8, 1973. Vancouver & District Dental Society, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Manitoba Dental Association, at Red Oak Inn, Brandon, Man. Jan 18-19, 1974. G.M. Nowazek, 308 Kennedy St., Winnipeg, Man. R3B 2M6.

CDA Conference on Dental Auxiliaries at Banff, Alberta, Jan 23-25, 1974. Dr. E.F. Allison, 1812-4th St SW, Ste 55, Calgary 3, Alta.

Winter Medical-Dental Assembly, at Mont Gabriel, Que. Mar 2-9, 1974. A.T. Wachna, 504 Medical Arts Bldg, Windsor 14, Ont.

College of Dental Surgeons of Saskatchewan, at Moose Jaw. Apr 25-27, 1974. R. G. Tessier, 310 Hammond Bldg, Moose Jaw, Sask.

Quebec Dental Surgeons Association, at The Queen Elizabeth Hotel, Montreal. May 1-3, 1974. Mrs. Francine Ouimet, 4290 Beaubien St. East, Montreal 409, Que.

College of Dental Surgeons of British Columbia, at Hyatt Regency, Vancouver. May 1-4, 1974. K.L Croft, Suite 325, 925 W Georgia St, Vancouver 1, BC.

Ontario Chapter, Canadian Society of Dentistry for Children at Four Seasons-Sheraton Hotel, Toronto. May 12, 1974. A. F. Dungy, Ontario Crippled Children's Centre, 350 Rumsey Rd, Toronto 350, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto, May 12-15, 1974. Mrs. W. C. Durham, 230 St. George St, Toronto, Ont, M5R 2P1.

Canadian Congress of Dentistry for Children, at Four Seasons-Sheraton Hotel, Toronto, May 17-18, 1974. J. Bradey, 320 Eramosa Rd, Guelph, Ont.

Alberta Dental Association, at Palliser Hotel, Calgary. May 30-31, 1974. J. R. Duncan, 306, 1711-4th St. S.W., Calgary, Alta.

Sixth International Conference on Oral Biology, at Toronto, June 3-5, 1974. G. S. Beagrie, Faculty of Dentistry, 124 Edward St., Toronto, Ont. M5G 1G6.

The Association of Canadian Faculties of Dentistry/L'Association des Facultés Dentaires du Canada, at Digby Pines, Digby, Nova Scotia. June 20-21, 1974. Dr. G.W. Myers, 3036 Dentistry/Pharmacy Centre, University of Alberta, Edmonton, Alberta, T6G 2H7.

Canadian Public Health Association, at the Arts and Culture Centre, St. John's, Nfld. June 17-20, 1974. CPHA, 1255 Yonge St, Toronto, Ont. M4T 1W6.

Northern Ontario Dental Association, at North Bay, Ont. Sept 6-8, 1974. R. C. Weegar, 539 Cassells St, North Bay, Ont.

Canadian Association of Orthodontists, at Windsor, Ont. Oct 2-4, 1974. J. J. Schachter, 210 Canada Bldg, Saskatoon, Sask. S7K 3M4.

Canadian Society of Public Health Dentists, at Windsor, Ont. Oct 2-5, 1974. J. M. Conchie, 14265 - 56th Ave, Surrey, BC.

Canadian Society of Oral Surgeons, at Windsor, Ont. Oct 1974. S. Weinberg, 693 McCowan Rd, Scarborough, Ont.

Montreal Dental Club Pre-Convention Seminar, at Queen Elizabeth Hotel, Montreal. Oct 26-27, 1974. Miss M. Komarnicka, 4166 St. Catherine St W, Montreal 215, P.Q.

Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct 28-30, 1974. Miss M. Komarnicka 4166 St. Catherine St W, Montreal 215, P.Q.

Academy of Dentistry (Toronto) Winter Clinic, at Royal York Hotel, Toronto. Nov. 28, 1974. Mrs. W.C. Durham, 230 St. George St, Toronto, Ont, M5R 2P1.

Canadian Academy of Paedodontics/Canadian Congress of Dentistry for Children, at Four Seasons-Sheraton, Toronto, May 17-18, 1975. J. Duncan, 155 James St. S, Suite 130, Hamilton 10, Ont.

Ontario Dental Association, at Four Seasons-Sheraton Hotel, Toronto. May 18-21, 1975. Mrs. W.C. Durham, 230 St. George St, Toronto, Ont, M5R 2P1.

College of Dental Surgeons of Saskatchewan, at Saskatoon. June 11-14, 1975. E. Freidin, 507-105-21 St. E, Saskatoon, Sask.

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Montreal Dental Club Fall Clinic, at Queen Elizabeth Hotel, Montreal. Oct. 27-29, 1975. Miss M. Komarnicka, 4166 St Catherine St W, Montreal 215, P.Q.

International Meetings

Associacao Paulista de Cirurgioes Dentistas, at Sao Paulo, Brazil. Jan 20-25, 1974. Dr. R. Todescan, 389 Bela Vista, Caixa Postal 2523-01321, Sao Paulo, Brazil.

Jamaica Dental Association, at Sheraton Kingston Hotel, Jamaica. Jan 27 - Feb 1; 1974. Keith E.R. Young, P.O. Box 19, Kingston 5, Jamaica.

Prosthodontic Society of South Africa, at Johannesburg, S. Africa. Apr 1-5, 1974. Congress Secretary, Private Bag 1, Houghton, Transvaal, S Africa.

German Dental Congress, at Hamburg, Germany. Apr 15-28, 1974. Bundesverband der Deutschen Zahnärzte e.V., 5 Köln 41, Postfach 410168, Germany.

International Conference on Oral Surgery, at Madrid, Spain. Apr 21-25, 1974. International Conference on Oral Surgery, PO Box 46078, Madrid, Spain.

International Congress on Dentistry for the Handicapped, at Amsterdam, Holland. Apr 22-24, 1974. M. M. Album, Medical Arts Bldg, Hillside Ave and York Rd, Jenkintown, Pa 29046, USA.

Asian-Pacific Dental Congress, at Jakarta, Indonesia. June 18-22, 1974. Dr. Yetty Rizali Noor, Faculty of Dentistry, Trisakti University, Grogol, Jakarta, Indonesia.

Australian Orthodontic Congress, at Sydney. August 5-9, 1974. P. Kinsella, 11 Anderson St, Chatswood, N.S.W. 2067, Australia.

Annual World Dental Congress of the FDI, at Royal Festival Hall, London. Sept 8-14, 1974. A. G. Alexander, British Dental Assn, 64 Wimpole St, London, England.

New Zealand Dental Association, at Auckland. Aug 26-30, 1974. General Secretary, New Zealand Dental Association Properties Ltd, PO Box 28084, Auckland 5, NZ.

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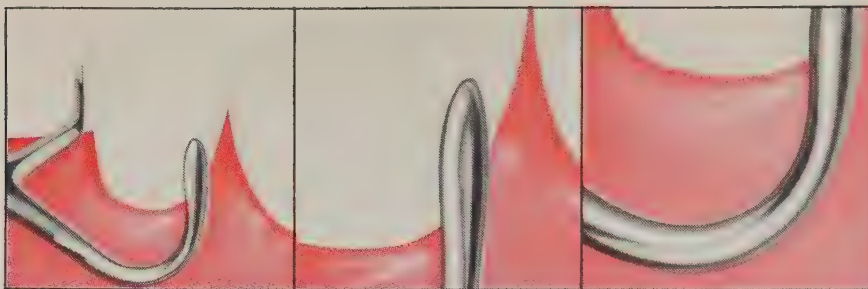
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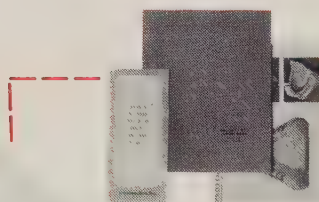
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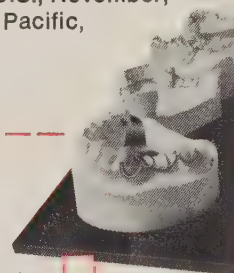
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Clasp Designs for Extension Base Partial Dentures, Lectures presented by A. J. Krol, D.D.S., 22nd Annual Seminar of the Group of Dental Studies, U.S.C. de Mexico, May, 1969.

Removable Partial Denture Design, Outline Syllabus, A. J. Krol, D.D.S., November, 1972, University of the Pacific, School of Dentistry.



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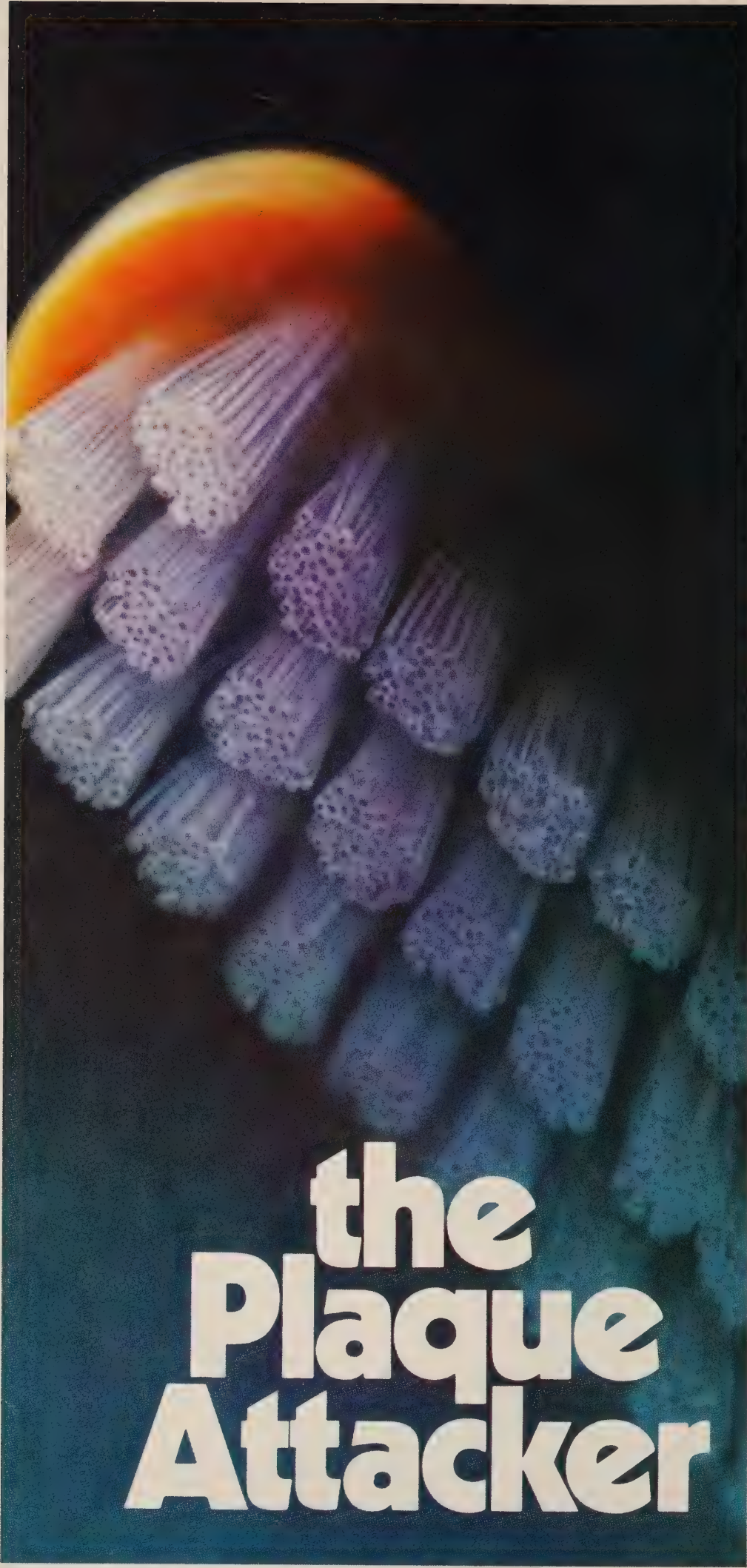
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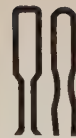
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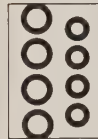


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*Goldman, H. M., and Cohen, D. W.: Periodontal Therapy, ed. 4, St. Louis, The C. V. Mosby Company, 1968, pp. 319-320.

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EXECUTIVE DIRECTOR'S PAGE



W. G. McIntosh, DDS

CDA services and programs continued

Canada's dental student population from its 10 dental schools now totals approximately 1,800, over 50 per cent of whom are CDA student members. Each year about one quarter of these students earn their dental degrees and the right to participate in the affairs of organized dentistry.

The Canadian Dental Association has developed a number of specific programs to serve and interest these student groups under the administrative umbrella of the Office of Student Affairs.

Recruitment

The Association publishes and distributes literature on careers in dentistry, dental hygiene and dental assisting. Recruitment films are also available from the CDA's film library.

Aptitude Test Program

The aptitude test program for prospective dental students has been in operation in Canada for several years now. Results of these tests, which provide a measure of an individual's aptitude to dentistry, are made available to any Canadian or American dental school for use in the annual selection process of first year dental students. Most dental schools recommend the tests to prospective students and some make it mandatory.

There are usually two time periods set aside each year when the tests may be taken, either in English or in French, at one of the many test centres which are spread across Canada. A total of 1,712 prospective dental students took the test for the 1973 admissions and more are expected next year.

The Canadian test program has been closely allied to the program administered by the American Dental Association, with the result that a functional reciprocity has developed whereby Canadian schools recognize the scores earned in tests held in the U.S. and American schools recognize Canadian scores.

Validation studies of the aptitude test scores are undertaken at frequent intervals. As a result of these studies and related research, the tests are altered from time to time to make them as effective and meaningful as possible.

Student membership

The Association has a student membership program which, for an annual fee of \$5.00 entitles members to receive various CDA publications including the *Journal of the Canadian Dental Association*, published each month; to take advantage of the national dental insurance plans; to attend the annual dental student conference; to be eligible as non-voting student representatives to the CDA Board of Governors; and to participate in the annual student table clinic competition at the CDA convention.

Canadian Dental Students' Conference

Five annual student conferences have been held to date, the last being in Montreal, November 14-17, 1973. Dental students from each Canadian dental school select a representative to attend the conference which features an agenda prepared by the students themselves.

The student membership committee of the Council on Education is available in an advisory capacity both for the planning of the conference and during it. Summary reports of each conference are made available to the Association's membership through the pages of the *Journal*. During the students' conference the student representative to the CDA Board of Governors for the coming year is elected.

Partial funding of these conferences is made available from outside the Association through the Canadian Fund for Dental Education.

Student clinic competition

A student table clinic competition has been an integral part of the scientific program of each CDA convention since 1971. Each Canadian dental school is entitled to select one student table clini-

cian to compete in this national competition. Prizes are awarded in two categories; "clinical" and "basic science." Outside funding is also available for this program through CFDE.

The annual student table clinic competition offers a number of benefits:

- the students benefit from their own efforts in organizing their clinics;
- they have an opportunity to see and participate in other convention activities;
- other convention registrants have the opportunity to see and hear the student presentations, which are usually excellent.

The CDA Board of Governors and Executive Council are encouraging the recruitment and selection of the most able dental students. They are attempting to inculcate in dental students a respon-

siveness to the obligations and responsibilities of organized dentistry.

Question No. 8

- 1) Do you think CDA should be closely involved with dental student affairs?
- 2) Should there be a student membership?
- 3) Should the Association assist with dental student selection by administering a dental aptitude test program?
- 4) Should programs such as the student conference and student clinic competition that are meaningful to the students be supported by the Association?

FEEDBACK

The Question:

Do you believe the Canadian Dental Association should sponsor council meetings which provide an opportunity for elected dental representatives from all parts of Canada to meet together and to work at finding solutions to dentistry's problems for the betterment of the dental profession as well as the public it serves?

Your answers:

Answer is 'yes' — for the same reasons you give. Dentistry in Canada is balkanized enough as it is. We've all got to meet to work together.

H. C. Bugden
Suite 406
225 Metcalfe Street
Ottawa

Yes. Council meetings appear to be a valuable form of communication between dentists who are separated by great distances. These meetings must also be a unifying factor important to the strength and well-being of the profession.

D. F. Green
208-3604, 52 Ave. N.W.
Calgary, Alberta

My answer to your first question is 'yes' but I should like to qualify it a bit, since I am concerned about the cost of so many meetings, which will become a greater problem with the development of what is threatened in Ontario and Quebec with respect to licensure.

I feel nothing would be lost if the membership of the councils was reduced. All the provinces

could still be represented on some of the councils. The old saying that 'The best committee consists of two members with one absent' has some value. I have formed this opinion from my experience, when I was active in bygone days.

W. Scott Hamilton
Academy Dental Group
10025 — 106 Street
Edmonton, Alberta

Yes. We are a relatively small profession. Unified we can accomplish a lot. Fragmented we will lose the power we need plus the respect of the public. The councils can take a unified approach to problems which are nation-wide — not just provincial.

J. W. MacKay
417 Medical Arts Building
Saskatoon, Sask.

Yes. There is no question in my mind that the more we get men from all across Canada together the stronger the profession will be. I hope the word 'elected' was used broadly. A man might serve on a special committee because he had a particular interest and ability; if it were a requirement to be an elected officer, his talents might well be lost.

Robert E. Echlin
992 Birchwood Avenue
Burlington, Ontario

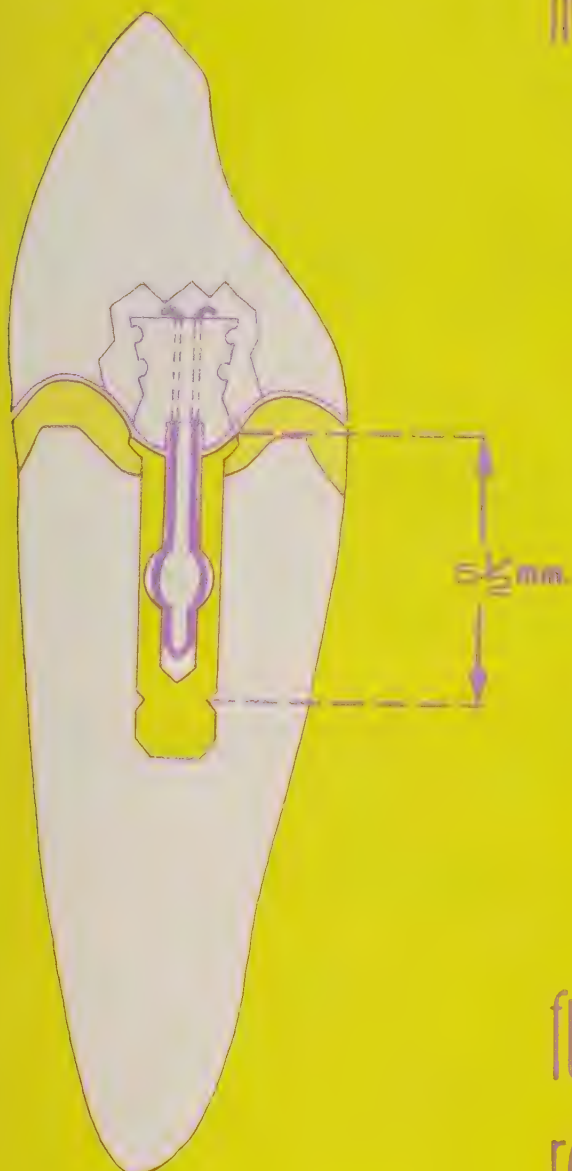
Editor's note: The Executive Director had unanimous 'yes' replies to Question 1. Where were all the nay-sayers whose opinions are so often quoted by others? If this is to be the valuable exercise it was designed to be, opinions of all shades, colours and persuasions are sought — and will be published.

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EDITORIAL

United we stand — divided we fall

G.P. Morris

No doubt all dentists in Canada enthusiastically welcome news of the setting up of the CDA Task Force which is charged with responsibility for re-examining the role of the Canadian Dental Association and recommending appropriate changes. While the Task Force is the focal point, each and every dentist must assume some personal responsibility for the success of the inquiry. Readers may forward their thoughts on the subject to the Journal, where they will be published or passed on to the appropriate parties.

As we see it from our editor's desk, the need for re-organization goes beyond the Canadian Dental Association per se. Our dental profession needs a comprehensive and integrated plan for administering its affairs at all levels — local, provincial and national. For each matter of business in which it is agreed that a high priority exists for professional involvement, a decision should be made as to whether it could best be handled by local societies, provincial organizations or the national association. Following that, ways must be found to secure appropriate resources so that each activity can be carried out successfully wherever it is assigned in the name of the profession as a whole. Only this can lead to development of a logical system for distributing our responsibilities, financing our activities and defining the budget requirements at each level. It is not a question of which level of organization deserves support but rather what level of support is needed nationally, provincially and locally so that the respective missions can be accomplished.

In the parlance of today — the crunch is now. Now is the time for all dental organizations to

share their resources and work together in unity to protect their common professional interests. Vital questions concerning the profession's role in provision of dental services to the Canadian public are now, but should not be, resolved independently in each province, because the decisions have ramifications far beyond provincial boundaries, affecting standards of education, licensing requirements, mobility of personnel and the profession's national image. Our profession has all the funds and the intelligence that the problems facing us will require, if only we develop the needed organization and professional unity.

R.M.G.

Hygienists' fiftieth birthday celebration

We extend congratulations to the American Dental Hygienists Association, which is celebrating its fiftieth year. Not too many of us, who tend to think of hygienists as one of the "new auxiliaries" in the dental office, would have realized that hygienists have been around and organized as an association since 1927. This is also an appropriate occasion to announce that this Journal will be carrying articles and news from the Canadian Dental Hygienists Association from now on. Efficient integration of services by all types of dental personnel, be they dentists, hygienists, dental assistants or technicians, is an economic requirement for the future. We hope that the invitation to the hygienists to share these pages will foster friendly and useful exchange of information among all those rendering dental services to the public.

R.M.G.

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1973 Report from the Board of Governors

Task force faces CDA internal problems

CDA Executive Council has appointed a chairman to spearhead the Association's Task Force on internal problems. Key man is Dr. J.B. Macdonald, executive director of the Council of Ontario Universities. Dr. Macdonald takes up his vital assignment immediately.

The necessity for a task force was squarely faced at the 72nd Annual Board of Governors Meeting in Vancouver, October 11-13. Opinion polarized around the Executive Director's report calling for a task force and resolutions brought forward by Quebec and Ontario corporate members on their membership problems.

Quebec and Ontario delegates arrived in Vancouver with resolutions framed around particular provincial legislation which was either in effect or slated for legislative action in early 1974. These separate pieces of legislation seriously affect the memberships of the College of Dental Surgeons of the Province of Quebec and the Ontario Dental Association. The position of Quebec is outlined in a separate article.

Arguments presented

The Reference Committee room was crowded with interested delegates and their supporters throughout discussions and particularly during the Quebec presentation. Attempts to understand the situation ebbed and flowed between committee members and other provincial delegates concerned over the effect of the Quebec proposals on CDA as a whole.

Dr. C.E. Gosselin, president of the College of Dental Surgeons of the Province of Quebec and Dr. Sidney Silver, also of the College, were convincing in their explanation of how present provincial legislation prevents the College from collecting fees for a voluntary body unless the general members of the profession vote yearly approval and why donations to CDA have to take the form of a grant unrelated to the number of members in the Quebec association.

The Ontario Dental Association, for its part, reported that it faces legislation to separate licensure from voluntary membership. An im-

mediate joint ODA/CDA membership drive would be necessary it felt. They proposed a special study into Association membership structure and Board representation, through a task force mechanism.

Resolutions passed

Key resolutions to overcome CDA problems were passed by the Board of Governors at the Saturday session, October 13. It was resolved:

- that a Task Force composed of one delegate selected by each corporate member and a lay chairman of corporate prominence, selected by the Executive Council, be constituted to meet to develop specific recommendations to overcome each of the problem areas referred to in the Executive Director's report and that one or two advisers, without voting right or authority to participate, be authorized to accompany the corporate member's delegate, at the expense of the corporate member.
- that a report including the specific recommendations developed at the meeting be prepared and distributed to all Governors, CDA Council Chairmen and the Presidents and Secretaries of corporate members for distribution as they see fit.

They further resolved to call a special meeting of the Board of Governors plus Presidents and Executive Directors (Secretaries) of the corporate members and Council Chairmen to discuss the recommendations drafted by the Task Force and to come to a consensus on each. By-laws would be drafted to accommodate the new recommendations and presented for acceptance at the next annual meeting.

Historical problems

"Your CDA has a problem. In fact, it has a number of problems, any one of which, if left to incubate without effective controls or inhibiting agents, could multiply and infect the life-blood of the Association, making it anaemic, weak and ineffectual as a national association for dentistry."

Continued on page 823

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With these words, Executive Director, Dr. William G. McIntosh set the tone of his annual report to the Board of Governors. He drew the members attention to the fact that these problems were not of sudden origin but stemmed from many historical factors. These included the fact that under the Association's present structure, CDA has no power to implement decisions and policies. It has failed to communicate, in a meaningful way, the extent and value of services performed for members' and, in return, individual dentists have failed to accept responsibility for determining objectives and functions and the financial involvement to support such goals. There are inconsistencies in membership structure, inequitable representation of corporate members on the Board of Governors and a failure to relate services and programs to revenues and expenditures in any realistic way.

In 1968, a five-year projection of services, revenues and expenditures was presented to the profession. It clearly displayed the impossibility of continuing the programs and services then being provided without an increase in the corporate member grants. Five years later, two-thirds of the dentists in Canada are still not supporting the national grants to the extent deemed necessary. Programs have suffered. Staff morale has suffered.

Dr. McIntosh went on to say, "Although fixed costs as well as others continue to escalate at an alarming rate, no clear evidence of improving the financial situation is in sight."

His report outlined eight major problem areas which must be solved: how to communicate more effectively with all the Association's publics; how to overcome organizational weaknesses; how to overcome membership structure irregularities forced upon the Association by provincial legislation and other facts beyond the Association's control; how to improve disparities in representation on the Board; how to motivate elected officials in the design and implementation of their Association's programs; how to develop a grant or dues structure that is equitable and acceptable to the majority of dentists; how to determine the services and programs members want and how to set priorities for these in a manner compatible with staff support and anticipated revenues.

In light of this report, the Quebec and Ontario proposals were amalgamated through interlocking resolutions and resulted in the appointment of a single task force, charged with immediate action.

The Executive Council met immediately following the Convention, October 18, to lay the groundwork for the task force and to start the search for a suitable lay chairman. This project is now underway.

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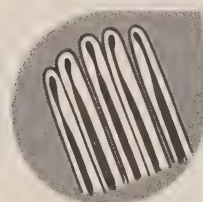
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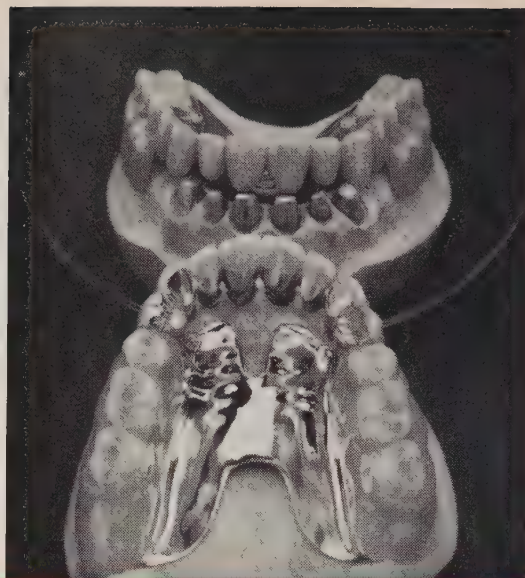
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Quebec position on membership in the CDA



Dr. S. Silver answers questions from the floor at the Reference Committee during presentation of the Quebec position.

Legislation entitled Bill 250, the Professional Code, was passed in the National Assembly of Quebec on July 6th, 1973. This heralded profound changes in the nature and method of administration of those occupations generally accepted as professions, and established as well a considerable number of new ones.

Bill 250 is the overall law which applies to all professions new and old. Each profession however will have its own act and will be required to enact by-laws for its own internal administration. Bill 254 for example is known as the Dental Act and applies to dentists only. The explanatory notes of the new Dental Act make clear its intent — "The main object of this Bill is to repeal the existing Dental Act and to replace it by a new Dental Act effecting concordance with the Professional Code Bill".

The College of Dental Surgeons of the Province of Quebec was aware that the Character of its own membership in CDA and that of each individual dentist would be affected by Bill 250. Accordingly it appointed a sub-committee to study the problem and charged it to bring back recommendations for referral to the CDA. The central issue to be considered was that the College would no longer be permitted to act as a collector agency to transmit dues to the CDA on behalf of its constituent members. Following from this it meant that membership by

dentists from Quebec in the CDA would in the future have to be on a voluntary and individual basis.

Accordingly the sub-committee met on May 31st, 1973 and submitted the following resolutions to the College:

1. That the College of Dental Surgeons of the Province of Quebec remain a "corporate" member of the Canadian Dental Association with the aim of representing the Quebec dental profession.

This statement was made to emphasize Quebec recognition of the importance of CDA to the profession throughout the country. In order for Quebec to make its proper contribution to Canadian dentistry it must have a voice in the national body. In turn the College would continue to serve as a link between the profession country wide and that in the province.

2. That every dentist in Quebec be permitted to join the Canadian Dental Association in an individual and voluntary way.

3. That the by-law of the CDA under which the annual fee (for each province) is established on a "per capita" basis be repealed.

It is clear that with voluntary membership in CDA the College could not undertake to forward to the CDA an annual contribution derived from an assessment on every dentist in the Province.

4. That the College commit itself financially only for the year 1974-75 from the viewpoint of contributing to CDA.

The contribution for the year 1972-73 has already been made, and that for 1973-74 will be made to the CDA under the old formula. Thereafter and beginning with the year 1974-75 an annual grant would be made by the College to the CDA in the nature of a fee for services rendered and could vary from year to year. It must be noted that under the new Professional Code the College must hold an annual general meeting open to

every dentist and that money matters and the annual budget must be approved at this meeting. The fee for services could and would be justified at that time before the membership at large.

5. That the contribution of the College to the CDA be \$45,000.00 in 1974-75.

This sum represents approximately half the annual fee, arrived at by present regulations, remitted by the College to the CDA. It must be understood that this amount will always be augmented by the total amount of fees, however these are to be determined, from those dentists in Quebec who choose to become members of the CDA voluntarily. A pessimistic and probably totally unreliable projection of a voluntary membership of only 50% from Quebec would then result in a total annual submission very near that established by current methods.

6. That the CDA be responsible for its own publicity to the dentists of Quebec.

The College as mentioned above would be required to explain and account for the money allotted to CDA in return for tangible benefits received. It was felt that the CDA could be more effective, speaking in its own behalf with respect to its many important services, in encouraging the individual dentist to become a voluntary member.

Comment: Changing times and changing circumstances have forced many modifications in a host of disciplines and systems. Dentistry too has had to respond to differing needs and to forces beyond its control. The profession in Quebec has endeavoured to find an accommodation for its own altered situation. It is confident that Canadian dentistry can provide solutions to its present problems and to any that might present in the future.

S. Silver, D.D.S.

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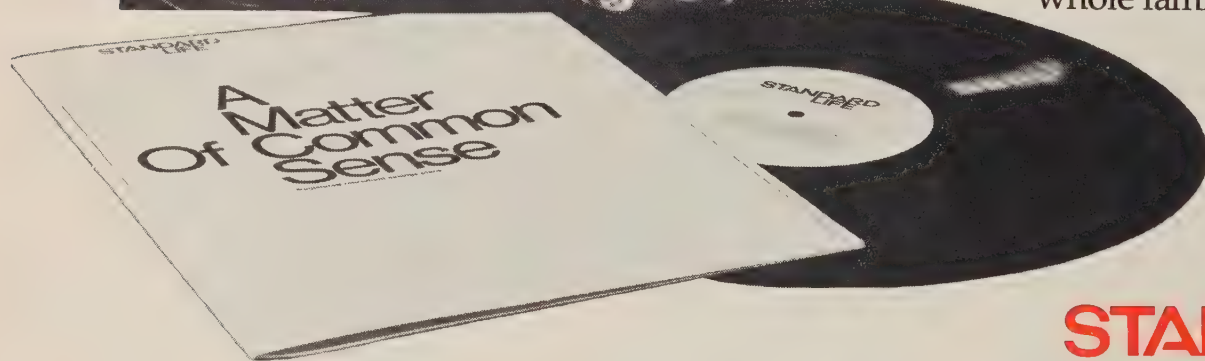


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More from the Board

Retiring president calls for strong association

Throughout his presidential report to the Board of Governors meeting in Vancouver, retiring president Dr. David K. Peters of St. John's called for a strong, national dental association.

"The importance of such an organization must be self-evident to every fair-thinking Canadian dentist," he said. "We are proud that our national organization includes virtually every practising Canadian dentist and will feel severely injured if this position is jeopardized."

He went on to say that every effort must be made to retain ten, strong and responsible corporate members, each contributing to the dental profession on a provincial and a national level. Mutual trust and respect must be the goal, he claimed. He is convinced it can be achieved through free and open communication.

Dr. Peters travelled almost 100,000 miles during his presidential year, covering the Association's business and representing Canada's 8,000 dentists before other professional groups and the public on radio and television.

Dental faculties urged to increase accreditation financial support

The Association of Canadian Faculties of Dentistry will be approached by the CDA to fund up to one-third of the cost of accreditation of undergraduate and graduate dental and dental hygiene programs. Educational facilities not represented by the ACFD will, in future, be assessed a survey fee.

This resolution was approved on the basis that the benefits of the accreditation process accrue not only to the Canadian Dental Association and the National Dental Examining Board but to the educational programs surveyed. In addition, it was pointed out that the CDA is faced with mounting direct and indirect costs of operating the accreditation program while, at the same time, facing internal communication problems which will require more of its financial resources.



Abra installed as CDA president

John E. Abra of Winnipeg was installed as 54th president of the Canadian Dental Association. He succeeds David K. Peters of St. John's, Newfoundland.

Dr. Abra, a Winnipeg orthodontist, has been with the University of Manitoba's dental faculty since 1960. He has an extensive background in association work. He is a past president of the Manitoba Dental Association, Mid-western Section of the American Association of Orthodontists and the Canadian Society of Orthodontists. He became a member of the CDA Board of Governors in 1965.

Dr. Abra was born in Winnipeg, Manitoba and attended public schools there. After receiving his Doctor of Dental Surgery from the University of Minnesota he went on to postgraduate studies in orthodontics there in 1932.

He joined the Royal Canadian Dental Corps in 1939 and later commanded No. 6 Company in Northwest Europe.

Dr. Abra is a fellow of the Royal College of Dentists of Canada as well as the International College of Dentists.

CDA joins effort to free imprisoned Soviet dentists

CDA will actively participate in an endeavour to obtain freedom for two dentists imprisoned in the Soviet Union for alleged anti-Soviet activities. In taking this stand, the Canadian Dental Association joins forces with the American and British Dental Associations and with the Alpha Omega Fraternity in the effort to effect the release of these two men.

Petitions will be sent to the Cana-

dian Government and to individual elected officials urging action through international bodies such as the United Nations and the International Red Cross. Efforts will also be made to enlist the support of organized dental groups here and abroad, including the Fédération Dentaire Internationale and CDA's counterpart in the Soviet Union.



Retiring president, Dr. David K. Peters, St. John's congratulates Dr. J.F. Reid, Vancouver on his successful election.

Dr. Reid named president-elect

Dr. J.F. Reid of Vancouver has been named president-elect of the Canadian Dental Association. Results of the election were announced at the close of the three-day meeting, October 11-13, of CDA's Board of Governors. Dr. H.L. Mussells of Montreal was the other candidate for the post.

A graduate of McGill University, Dr. Reid has been in group practice in North Vancouver since 1951. He has been active in provincial and national

dental affairs since his election as a director of the British Columbia Dental Association in 1962. He was elected president of the association in 1968.

Dr. Reid was appointed a governor of the Canadian Dental Association during his term of office as president of the BCDA and served as a member of the federal Ad Hoc Committee on Dental Auxiliaries (Wells Commission) in 1969-1971.

Insurance changes

One of the more important decisions of the Board, insofar as it might affect the individual dentist, was the approval of the new income protection and office overhead plans proposed by the Insurance Council.

The plan is an entirely new concept in group insurance, having:

1. Automatic cost of living escalator clause
2. Rehabilitation benefits
3. Graded approach to office expenses, plus
4. Increased limits (\$2,000 per month income protection and \$3,500 per month office expense)

Such a change will be welcomed in this era of continually increasing costs.

The new program is to be underwritten across Canada solely by CNA Assurance. The Board expressed its satisfaction on the success of the various sponsored plans and the growth of the Retirement Savings Plan.

CDA Board clarifies meaning of "effective supervision"

During its recent annual meeting, the CDA Board of Governors zeroed in on the term "effective supervision" as it applies to the dentist and his auxiliary staff in an effort to clarify its meaning.

The definition adopted by the Board notes that the dentist must assume ultimate responsibility for the nature, extent and quality of the dental care or service received by his patient. Specifically, the dentist is responsible for: delineating the scope of services performed by allied personnel; assuring that allied personnel have the training, knowledge and ability to effectively perform the duties he has delegated (duties not requiring the full knowledge and skill of the licensed dentist); and for assuring himself that the duties assigned have been competently and correctly discharged.

"Effective supervision" also entails the assumption that the allied dental health worker who renders services directly for the patient will perform his or her duties within the same accommodation as that occupied by the dentist when the dentist is present.



Intense concentration registers on every delegate's face at the 74th Annual Board of Governors Meeting. Simultaneous French-English translation was provided.

Dental representation on government health committee

The CDA Board has agreed that an effort should be made to determine whether or not the corporate members would be interested in a co-ordinated and simultaneous approach to provincial and federal ministers responsible for dental services to encourage them to include dental representatives on all government health committees. If there is general agreement on this proposal, CDA will undertake the co-ordination of efforts to implement this type of approach.

Dental public health and oral radiology gain specialty status

The Board of Governor of the Canadian Dental Association has approved the recognition of dental public health and oral radiology as specialties.

Dental public health is defined as "the science and art of preventing and controlling dental disease and promoting dental health through organized community efforts. It is that form of dental practice which serves the community as a patient rather than the individual. It is concerned with the dental health education of the public, with research and the application of the findings of research, and with the administration of group dental care programs as well as the prevention and control of dental diseases on a community basis."

The area of oral radiology is defined as "that branch of dentistry which pertains to the making and interpretation of radiographs in the craniofacial complex."

Accreditation of secondary school dental assisting programs refused

Fair comparisons between secondary school programs in dental assisting and those in community colleges cannot be made, according to the survey teams which have been attempting to accredit various programs. Problems relating to the relative immaturity of the students, inflexibility of the administrative system, inadequacy of staff-student ratios, lack of stated objectives, superficial coverage of basic sciences and inadequacy of admission policies were found. Voting upheld the Council of Education's resulting resolution not to evaluate and accredit such programs.

Specialty redefined

An amended definition of prosthodontics to include restorative dentistry was approved by the Board during discussions of the specialty areas. It now reads:

"Prosthodontics is that branch of dentistry pertaining to the restoration and maintenance of oral function, comfort, appearance and health of the patient by the restoration of the natural teeth and the replacement of missing teeth and contiguous tissues with artificial substitutes.

"A prosthodontist is a dentist who is specially trained in prosthodontics by advanced education, training and clinical experience.

"There are three main areas in prosthodontics, namely: removable prosthodontics, restorative dentistry

(operative dentistry and fixed prosthodontics) and maxillofacial prosthetics.

"Therefore, prosthodontics is concerned with:

1. providing suitable substitutes for the coronal portion of teeth;
2. the replacement of missing teeth and oral structures;
3. correlating the masticatory surfaces to achieve normal function;
4. the prosthodontic treatment of patients who have incurred oral facial deformities.

"These services may include other adjunctive treatments necessary for the proper completion and maintenance of such restorations."

Section status has expired for both the Canadian Academy of Prosthodontics and the Canadian Academy of Restorative Dentistry, as they no longer represent the specialty as now defined.

An application for section status was received by the Board from a new group, "The Association of Prosthodontists of Canada;" however, action was deferred until the affiliation of the existing bodies of prosthodontics and restorative dentistry is clarified.

Board of Governors urges corporate bodies to restrict classification of auxiliaries

The Canadian Dental Association's Board of Governors urges all corporate bodies to restrict the classification of auxiliaries to the basic categories of dental assistant, dental hygienist and dental technician. Standardization of terms is considered essential in order to avoid confusion in the development of the roles of new types of personnel.

Extended care data needed

Local dental societies will be approached by the Council on Hospital Services to obtain statistical data relating to the dental care requirements and population groups in extended care facilities. The request follows a presentation earlier this year to the federal government on the growing need for dental care in these centres.

The Council also won Board approval for the profession, through its corporate members, to become actively involved in the delivery of dental services to extended care patients.

Board of Governors endorses need for national standards

The CDA Board of Governors has strongly endorsed the need for establishing national specifications and standards for dental materials and devices.

The Board has urged the Association's Committee on Standards for Dental Materials and Devices to develop a pilot project, in co-operation with the appropriate government agencies, to demonstrate the value of a testing facility.

CDHA and CDNAA added to Health Care Council

The Canadian Dental Association's Council on Health Care is to be expanded by the addition of non-voting representatives from both the Canadian Dental Hygienists Association and the Canadian Dental Nurses and Assistants Association. The decision to have broader representation on the Council was made by the CDA Board of Governors during its annual meeting, October 11-13, in Vancouver.



IN MEMORIAM

Donald W. Gullett, 1898-1973

Don Gullett is dead. Were the man himself to write this notice, that is how he would state it. He would put it that simply, that bluntly, stripped of formality and pomp.

As principal servant of Canada's dental profession for more than 24 years, he had the formidable task of moulding a whole range of disparate interests into a unified whole, a resilient fibre in the fabric of the nation. The man who, day in and day out, undertakes such work finds himself in a world where success and failure hinge on a word that should have been spoken and wasn't or a word that shouldn't have been said and was.

Frequently, the man's own personality may in time be coloured by the exigencies of his work. There is the temptation to become cautious in

words and not in thought, to don a non-committal mask that, with fine impartiality, can be shown to friend and foe alike.

Don Gullett never became such a man. Probably he was incapable of feeling the temptation. But he was blessed with a keen social sensitivity, an awareness of the profession's responsibility to serve the dental needs of a total population rather than the few who could afford a luxury service. Thus armed, he always assessed the facts, decided what was proper, and then spoke out as plainly, as forcefully, and as frequently as he could. It was that simple to him, that fortunate for us.

At the core of Don Gullett's thought was the conviction that dentistry could make its rightful contribution to the health of the nation only

by total commitment to health research, health education and health care. He expressed this conviction often, and to the degree that he could, he did something about it. As history will reveal, what he did was magnificent. He will need no marble statues, no dedicatory plaques. There will be instead whole generations of Canadians, many not even knowing his name, to stand as the testament to the clarity of his vision and to his dedication. This will be his lasting monument.

*The heights by great men reached
and kept*

*Were not attained by sudden
flight*

*But they, while their companions slept
Were toiling upward in the night.*

— Henry Wadsworth Longfellow

F.H. Compton, DDS

Voluntary Conjoint Membership

'Voluntary Conjoint Membership' is a phrase used to describe a voluntary individual membership category which at one and the same time identifies an individual dentist's membership in his national association (Canadian Dental Association), and his provincial association (corporate member). Membership in either of the two levels of organization is contingent on membership in the other level. Voluntary conjoint membership is applicable only in those provinces where membership in the corporate body is not a condition of licensure.

The ultimate principle of conjoint membership is one based on mutual trust, co-operation and common objectives.

The main features of voluntary conjoint membership are:

1. Each organizational level is dedicated to look after the interests of its members and the public which they serve.
2. Individual membership is voluntary.
3. Individual membership cannot be held in the provincial association without also holding membership in the national association and vice-versa.
4. The conjoint membership fee will be comprised of two portions. Each conjoint partner will establish its own portion of the total conjoint membership fee, giving due regard to its own

requirements as well as to those of the partnership. The CDA component of the total conjoint membership fee will be the same in all provinces at any given time and will be set by the CDA Board of Governors with a view to stabilizing the amount for minimum periods of three years.

5. The provincial association will collect the conjoint membership fee and forthwith forward the appropriate portion to the national association.
6. Eligibility for participation by dentists in all activities and programs sponsored by the CDA, and the provincial corporate member, such as conventions, educational programs, insurance and investment programs, *Journal* subscriptions and the like, will depend on individual voluntary conjoint membership in the appropriate dental associations.
7. The term 'conjoint membership' implies co-operation for mutual benefit to the provincial and national groups. Each group at the same time must maintain autonomy for decisions and actions within its particular geographic and political sphere of influence.
8. Recruitment of members should be a co-operative activity, sponsored by the national association and the provincial corporate member.

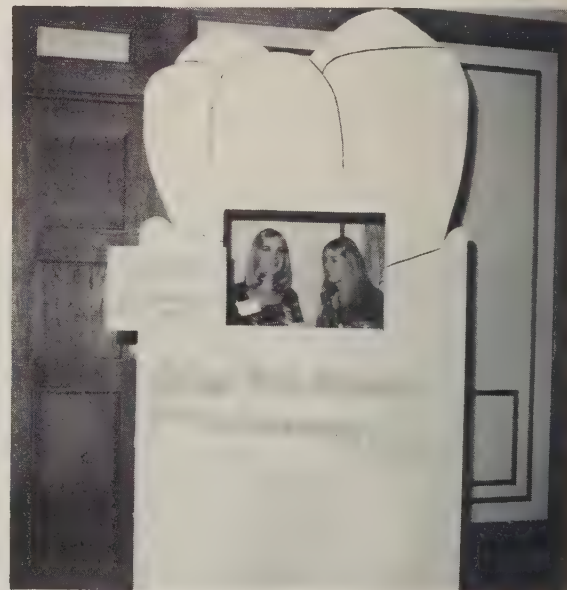
Concentrating on the business at hand are (L to R) Kay Kirker, Councils Executive Secretary; W.G. McIntosh, Executive Director; W.P. Munsie, Chairman of the Board of Governors; David K. Peters, President; J.B. Taylor, Treasurer and Louis Bernier, Past-President.





KICK OFF TO A GREAT CONVENTION!

Over four thousand dentists, specialists, auxiliaries, guests, wives and exhibitors agree — Vancouver '73 was tops in Canadian Dental Association conventions. Registration hit record levels. Clinicians at Scientific Sessions spoke to overflow audiences. Table clinic displays drew capacity crowds. Exhibitor space was sold out and attracted steady business.



Above: Filling a major gap, Dental Hygienists at Hotel Vancouver direct visitors to register at Hyatt Regency.

Left: "Old salt" and convention chairman, Dr. Murray Cornish welcomes "Commodore" David K. Peters aboard for the President's Ball.



Exhibitors made the most of their selling opportunity as dentists and auxiliaries flocked around the newest and best.



Lunch with Chief Dan George of television and movie fame was a highlight planned by Vancouver convention hostesses.

President Peters had tenth birthday wishes for the President and Convention Co-chairpersons of CDHA.

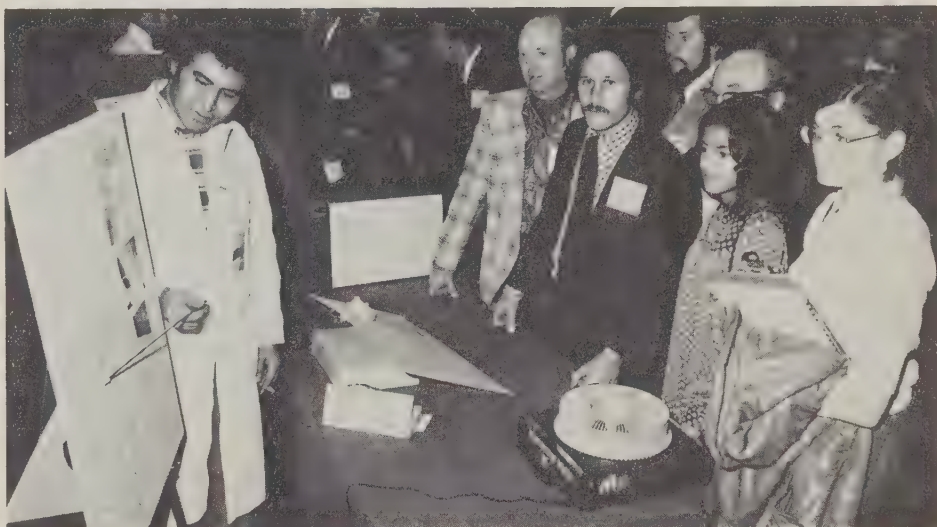


Table clinics – a fast way to cover what dentists across Canada find new and different.

Schuhplatters do mock battle for the celebrants of opening night Oktoberfest.





Henry Thornton, president of Dentsply International, congratulates Gary Keyes of the University of Toronto on winning first prize in the basic sciences and research section of the student clinic competition.

Awards presented to student clinicians during opening ceremonies of convention

Outstanding dental student clinicians from across Canada were presented with Canadian Dental Association Student Awards on Sunday night, during the opening ceremonies of the 1973 Canadian Dental Association Convention. The presentations were made by Henry Thornton, president of Dentsply International Ltd. Each accredited dental school in Canada entered this year's contest, presenting 15 minute table-top demonstrations in some phase of dental research, diagnosis or procedure.

First prize winners in each of the two categories were: Gary William Keyes of the University of Toronto, in the basic sciences and research section; and David T. O'Connell of Dalhousie University, Halifax, in the clinical application and technique category.

Mr. Keyes used a scanning electron microscope to show the differences achieved in using slow and high speed rotary instruments, the difference in results with a hand instrument and differences between two types of restorative materials, in their unpolished and polished states.

David O'Connell presented "acid etch in restorative dentistry" describing one of the newer techniques in restorative material. He illustrated certain improvements in the material which may be used in the future.

Chairman of the Student Table Clinic Program is Dr. Hector MacLean, former Dean, Faculty of Dentistry, University of Alberta. He expressed complete satisfaction with this year's presentations.

Students chosen to participate receive an expense-paid trip to the Convention as well as the Dentsply awards.

Judges were Dr. MacLean, Dr. Louis Bernier, past-president of the Canadian Dental Association and Dr. J.F. Reid, president-elect of the Association.

Winner of Canadian Dental Research Foundation Award

The \$500 research prize of the Canadian Dental Research Foundation was awarded to Dr H             of the University of Montreal. The presentation was made during the opening ceremonies of the 1973 Canadian Dental Association Convention in Vancouver. Professor Lemay-Lalibert   won her award for graduate work at the University of Montreal in pulp tissue physiology and its pharmacological significance.

Dr Lemay-Lalibert   received her DDS degree from the University of Montreal in 1970 and her MSc degree in pharmacology in 1972. She is now a professor in dental therapeutics at the University of Montreal and is continuing her research into pulp tissue. She hopes to expand this, in the future, into more clinically-oriented research.



Dr. Norman Thomas congratulates Dr. Helene Lemay-Laliberte on winning the \$500 research prize of the Canadian Research Foundation.

Workshop on dental school admissions

A national workshop on dental school admissions policies and procedures will be sponsored by the Canadian Dental Association, February 18-19, 1974.

The workshop will direct much of its attention to the utilization of information provided by the Dental Aptitude Testing Program and will focus on determining the needs of admissions committees in connection with the program.

Conference on dental auxiliaries

The Canadian Dental Association's Council on Health Care has scheduled a Conference on Dental Auxiliaries, January 23, 24, 25 in Banff, Alberta.

The Conference will be a workshop or "think-tank" meeting, at which frank discussions are anticipated. New auxiliary concepts are now being instituted without overall design. The dental profession's ability to direct the pattern which these services should take is handicapped until the profession agrees on the proper role for auxiliaries and until the objectives of the auxiliary groups, themselves, are crystalized.

Delegates board buses outside the Hotel Vancouver for an architectural tour of West Vancouver's finest homes. The tour was organized by members of the Playhouse Guild.



Dr. Burgman elected chairman of Society's Odontology Section

Dr. G.E. Burgman of Niagara Falls, Ontario, has been elected chairman of the Odontology Section of the Canadian Society of Forensic Science. The announcement was made at the Society's annual business meeting held October 14 at the Hotel Vancouver. Dr. Burgman succeeds Dr. James D. Purves of Toronto.

CDA Retirement Savings Plan

Unit values of the Canadian Dental Association Retirement Savings Plan stood as follows on October 31, 1973:

Guaranteed Fund \$10.478

Fixed Income Fund \$14.033

Common Stock Fund \$32.999

Total assets (market value) of the plan were \$17,345,035.90.

The following transactions occurred during the preceding month: bought 8,607 units CIF Conventional Mortgage Fund; 8,000 shares Domtar Ltd; 2,000 shares MacMillan-Bloedel; \$500,000 CGE note; \$100,000 IAC note; \$500,000 Ford Motor Credit Co. note. Sold: 20,000 shares Abitibi Paper; \$600,000 Consumers' Gas note; \$500,000 Mercantile Bank of Canada note.

For further information please write to CDA-sponsored Pension and Insurance Plans, 230 St. George St., Toronto, Ont M5R 2P1.

Editor's error: In the November issue the figure quoted for the Common Stock Fund should be \$31.042.

Personal touch?

Ever wonder what happens if your mail order is "short shipped", "fouled up" or "still in transit" just when you need it most. Who do you speak to if your package arrives in crumpled condition... and how quickly can the damaged products be replaced?

You know it, Doctor. It makes a lot of sense to deal face-to-face with people who know their business... and yours. People like Denco... with a well trained staff of dental supply specialists and a full line of readily available products and equipment. The kind you can count on to get you what you need, when you need it.

Beats the "old post office bounce"... and may even save you a few headaches in the long run.



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Deaths

Gullett, Donald Werden. 75. Toronto. Royal College of Dental Surgeons of Ontario, 1923. 2-11-73. Survived by Alice (wife); John W. and Donald R. (sons); and Mrs. Margaret A. Hurton (daughter). Honorary member of CDA.

Kerster, Gustave A. 83. White Rock, B.C. Royal College of Dental Surgeons of Ontario, 1925. 19-9-73. Survived by Marjory (wife); John, Lawson and George (sons).

King, David Anderson. 62. Winnipeg. University of Toronto, 1935. 20-9-73. Survived by Margaret (wife); David and Tom (sons); Mrs. Judy Gaston and Mrs. Gail Moss (daughters).

Lamarre, J. Anselme. 71. Montréal. L'université de Montréal, 1928. 26-9-73. Il laisse un fils, Dr Robert et deux filles, Lise Thomas et Rose-Marie Globensky.

Lowry, Clifford M. 70. Calgary. University of Alberta, 1929. 15-10-73. Survived by Ruth (wife); Mrs. Joy Beach and Mrs. Louise Johnson (daughters).

McKee, Godfrey Gilford. 76. Elora, Ont. Royal College of Dental Surgeons of Ontario, 1921. 1-4-72.

Pollack, Joseph. 72. Montreal. McGill University, 1925. 5-10-73.

Les actualités dentaires

L'Association

Les dentistes de la Nouvelle-Ecosse élisent un nouveau président

Le docteur Alan Stewart de Windsor, Nouvelle-Ecosse, a été élu récemment président de l'Association dentaire de la Nouvelle-Ecosse. Diplômé en 1954 de la Faculté de dentisterie de l'université de Dalhousie, le docteur Stewart succède ainsi au docteur Douglas Eisner de Halifax.

Un message du Conseil sur l'assurance et les placements de l'ADC

Le Conseil sur l'assurance et les placements de l'ADC a été informé, plus particulièrement durant les quelques mois qui viennent de s'écouler, de plusieurs cas où les membres de la profession ont reçu, de la part d'agents d'assurance indépendants, le conseil de résilier le régime d'assurance groupe de l'ADC en faveur de contrats individuels.

A la suite de l'analyse d'un certain nombre de cas, le Conseil et le CDSPI ont découvert que les comparaisons avancées comportaient plusieurs affirmations trompeuses et des erreurs grossières.

Il va sans dire que le Conseil sur l'assurance et les placements de l'ADC se tient constamment au courant des régimes que peuvent offrir l'industrie de l'assurance. Aussi, après avoir analysé soigneusement plusieurs contrats individuels, le conseil exprime la con-

viction que les régimes de l'ADC, des points de vue du coût et de la qualité, sont très supérieurs à ceux que l'on offre à titre commercial individuel.

Les régimes de l'ADC ont été élaborés par des dentistes pour répondre aux besoins spécifiques des dentistes. Le pouvoir d'achat de 8000 dentistes, joint à une garantie de réserves substantielles, permet aux membres de se procurer le régime d'assurance le plus intéressant et le plus rentable, en échange d'une prime raisonnable.

Le Canada

Les fonctions de l'Office des professions du Québec

Venant coiffer la réforme générale des professions au Québec, l'Office des professions du Québec, dont la tâche fondamentale est de veiller à ce que chacune des corporations professionnelles assure la protection du public, constitue un organisme gouvernemental pourvu tout à la fois de fonctions de gestion administrative, de régulation et de consultation.

Fonctions de gestion administrative

A ce chapitre, les principales fonctions de l'Office des professions du Québec sont les suivantes:

- Nomination des membres externes aux Bureaux des corporations professionnelles;
- nomination des membres des bureaux provisoires pour les corporations d'exercice exclusif nouvellement créées et pour certaines des nouvelles corporations professionnelles à titre réservé;
- détermination des examens d'entrée aux nouvelles corporations d'exercice exclusif;
- enquête, surveillance et contrôle général de l'activité des corporations professionnelles;
- suggestion quant à la constitution de nouvelles corporations, quant aux modifications à apporter aux lois professionnelles, quant à un tarif d'honoraires professionnels pour les services professionnels rendus lorsque

le coût de ces services n'est pas fixé par convention collective ou déterminé par la loi;

- publication annuelle des recueils des décisions des comités de discipline et du tribunal des professions;
- présentation d'un rapport annuel, etc.

Fonctions de régulation

- Fixation des normes de délivrance et de détention des permis habilitant à faire de la radiologie sauf pour les médecins, les dentistes et les médecins vétérinaires;
- détermination d'une liste de médicaments pouvant être prescrits par les pédiâtres;
- pouvoirs de réglementation relatifs aux matières suivantes à défaut par les corporations professionnelles de s'exécuter adéquatement de leur tâche à cet égard:
 - code de déontologie;
 - procédures d'arbitrage des comptes;
 - fonds d'indemnisation;
 - procédures des comités d'inspection professionnelle;
 - règles de conservation, d'utilisation ou de destruction des dossiers;
 - publicité professionnelle et autres.

Fonctions de consultation

- Auprès du lieutenant-gouverneur en conseil relativement à:
 - la détermination des diplômes délivrés par les établissements donnant ouverture à un permis d'exercice ou à un certificat de spécialiste;
 - à la fixation des modalités de la collaboration des corporations avec les autorités des établissements d'enseignement du Québec dans l'élaboration des programmes d'études conduisant à un diplôme donnant ouverture à un permis d'exercice ou à un certificat de spécialiste et dans la préparation des examens ou autres mécanismes d'évaluation des personnes effectuant ces études;
 - la délimitation du territoire du Québec en régions et à la fixation d'un mode de représentation de chacune de ces régions au sein du Bureau de chacune des corporations professionnelles;
 - à la constitution, par lettre patente, de nouvelles corporations professionnelles à titre réservé;

— et autres.

— Auprès des corporations professionnelles relativement:

— à la détermination, parmi les actes réservés à certaines corporations, d'actes pouvant être délégués à des classes de personnes autres que les membres de ces corporations.

L'utilisation des cassettes accorde des crédits en Alberta

Au cours de sa réunion de juin dernier, le Conseil d'administration de l'Association dentaire de l'Alberta a approuvé une proposition recommandant que la série de bandes magnétiques en cassettes de l'ADC soit reconnue comme matériel pour l'enseignement permanent. Ce matériel, distribué par l'entremise de Medifacts Ltée, permettrait alors aux dentistes d'obtenir des crédits en éducation permanente. Le nombre en sera déterminé par le Conseil d'administration. L'utilisation de cette série de cassettes accorde aussi des points en éducation permanente au Manitoba et en Nouvelle-Ecosse.

Le programme de soins dentaires pour les enfants du Manitoba

Le rapport préliminaire sur la mise en oeuvre au Manitoba du programme préventif de soins de santé dentaire pour les enfants de moins de 12 ans sera complété vers la fin d'octobre.

La responsabilité de l'opération de ce programme relève du ministère de la Santé et du Bien-être social, avec la collaboration du Comité de santé dentaire. Les représentants du secteur non gouvernemental comprennent des délégués de l'Association dentaire du Manitoba, de la Faculté de dentisterie de l'université du Manitoba, de l'Ecole d'hygiène dentaire, de l'Association des hygiénistes dentaire du Manitoba, et de l'Association des infirmières et des assistantes dentaires de la même province.

Les responsables ont accordé une attention particulière à l'utilisation optimale du personnel dentaire à tous les niveaux selon les problèmes propres à chaque région de la province. De plus, ils analysent soigneusement l'efficacité relative de chaque service.

Nomination de monsieur René Dussault à la présidence de l'Office des professions du Québec

Le ministre des Affaires sociales, monsieur Claude Castonguay a annoncé, au nom du gouvernement du Québec, la nomination de Me René Dussault au poste de président de l'Office des professions. Ce nouvel organisme a été créé à la suite de l'adoption par l'Assemblée nationale du Code des professions et des lois connexes dont les dispositions établissent un nouveau cadre de fonctionnement pour l'ensemble des corporations professionnelles au Québec.

Situé au centre de toute la réforme des professions, l'office des professions du Québec, dont la tâche générale est de veiller à ce que les corporations professionnelles assurent la protection du public, constitue la plaque tournante essentielle à la mise en oeuvre du Code des professions et des autres lois professionnelles.

Monsieur Castonguay se réjouit de la nomination de Me Dussault qui assure le succès d'une réforme d'aussi grande envergure. Rappelant l'exceptionnelle formation académique et pratique de Me Dussault dans le domaine de l'administration publique, notamment dans le secteur des Affaires sociales, le ministre, monsieur Claude Castonguay, s'est dit convaincu que Me René Dussault qui a participé activement à la rédaction du Code des professions et de plusieurs lois connexes et qui est, de ce fait, bien connu d'un grand nombre d'organismes professionnels ayant eu à établir des contacts réguliers en vue de ces nouvelles législations, possède toute la compétence et la personnalité requises pour assurer la réussite d'un travail multidisciplinaire aussi délicat et d'une telle importance.

Les orthodontistes du Québec élisent leur exécutif

Au cours de la récente réunion annuelle de l'Association des orthodontistes de la province de Québec, les membres suivants furent élus à l'exécutif: le docteur Michael Rennert, président, le docteur Lucien Bossé, vice-président, le docteur Léonard Prosterman, trésorier et le docteur Jean-Paul

Couture, secrétaire. De plus, l'Association, dont le président sortant de charge est le docteur C. Baril, a choisi le docteur Frank Shamy, en qualité de membre actif sans portefeuille.

Les accidents dentaires garantis par la Croix-bleue

Au cours de la réunion de trois jours tenue au secrétariat de l'ADC, le Conseil sur l'assurance et les placements a approuvé une proposition recommandant que le régime actuel de la Croix-bleue soit élargi afin d'inclure aussi les accidents dentaires. Les taux de ces nouvelles garanties seraient fixées à 10 cents par mois pour la protection simple et à 24 cents par mois pour la protection familiale.

Le docteur Low élu président de l'Association de l'Alberta

Le docteur B.A. Low, d'Edmonton, occupera la présidence de l'Association dentaire de l'Alberta. Il succède au docteur R.G. Dickson, de Drumheller, Alberta.

Le docteur Low est un diplômé de la Faculté de dentisterie de l'université de l'Alberta.

Régime d'épargne-retraite de l'ADC

Les valeurs respectives du Régime d'épargne-retraite de l'Association Dentaire Canadienne étaient les suivantes au 31 octobre, 1973:

Fonds avec garantie \$10.478

Fonds à revenu fixe \$14.033

Fonds d'actions ordinaires \$32.999

L'avoir total (valeur marchande) du régime se montait à \$17,345,035.90.

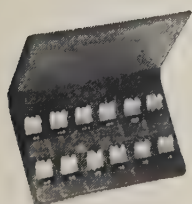
Au cours du mois précédent, les transactions ont été les suivantes: achat 8,607 unités CIF Conventional Mortgage Fund; 8,000 actions Domtar Ltd; 2,000 actions de MacMillan-Bloedel; \$500,000 Ford Motor Credit Co. note. Vente 20,000 actions Abitibi Paper; \$600,000 Consumers' Gas note; et \$500,000 Mercantile Bank of Canada note.

Pour de plus amples renseignements, veuillez écrire à: CDA-sponsored Pension and Insurance Plans, 230 St. George St, Toronto, Ont M5R 2P1.



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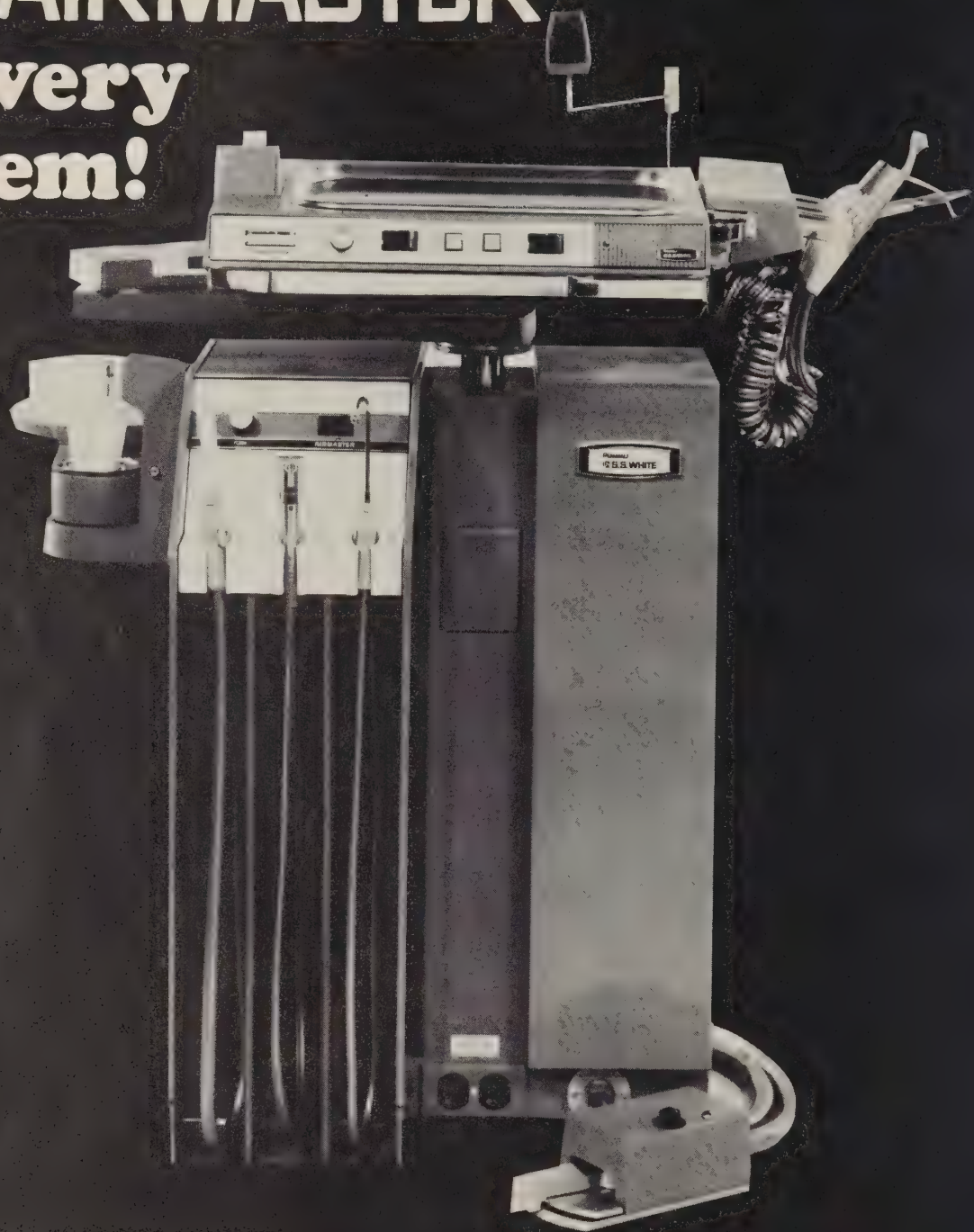


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Sealing of pits and fissures with an adhesive for caries prevention

M.G. Buonocore, DMD, MS
Rochester, New York

This article recapitulates the clinical protocol for sealing pits and fissures with an ultraviolet light polymerized adhesive and describes the bonding mechanism whereby the resin impregnates and adheres to the enamel surface.

La communication suivante passe en revue le protocole relatif à la fermeture des puits et fissures de l'émail au moyen d'un adhésif polymérisé et traité aux rayons ultraviolets, et présente aussi une description du mécanisme d'adhérence par lequel la résine imprègne et adhère à la surface de l'émail.

Decay of the pits and fissures of teeth presents a major dental problem. These areas are not as much benefited by fluoride as are the smooth surfaces. The decay process, particularly in the first and second molars, usually starts soon after tooth eruption, is generally rapid and can often result in loss of the tooth. Studies done by Backer-Dirks^{1,2} in the Netherlands indicate that in a random sample of boys and girls, all permanent occlusal surfaces in molars had decayed by the age of nine. Judging

from personal clinical observations and other reports, these findings are probably representative of conditions in many areas of the world, and point out the need for protecting pits and fissures against caries.

In the past, various attempts have been made to eliminate pit and fissure caries. The suggestion of Hyatt³ during the 1920's to drill out all fissures and fill them with amalgam had considerable merit. Many dentists, however, objected to Hyatt's procedure indicating that it was presumptuous to drill out all fissures since all fissures did not decay. During the same period, Bodecker⁴⁻⁶ in recommending eradication of fissures to produce wide, non-retentive, self-cleansing grooves, was subjected to similar criticism. In addition, as shown by Gillings and Buonocore,⁷ the extreme depth of some part of each fissure would result in a virtual exposure of the dentine if Bodecker's procedure was used. These techniques were, moreover, not true preventive procedures in that both required drilling and one also required filling of the tooth with amalgam. Other attempts at preventing caries in pits and fissures included treatment with silver nitrate,⁸⁻¹¹ with potassium ferrocyanide and zinc chloride,¹²⁻¹³ and coverage with various cements;^{8,9} none of these techniques have proved successful.

In recent years adhesive resins have received considerable attention as potential pit and fissure sealants. The use of such materials would require

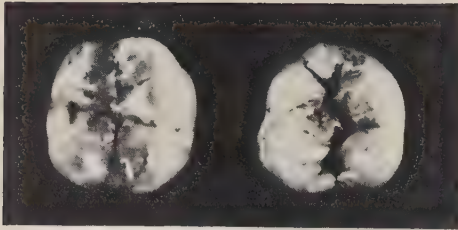


Fig 1 Two extremes in the appearance of pits and fissures. Both teeth were stained to reveal proteinaceous debris remaining at the orifice of the pits and fissures even after the teeth were polished with a pumice paste.

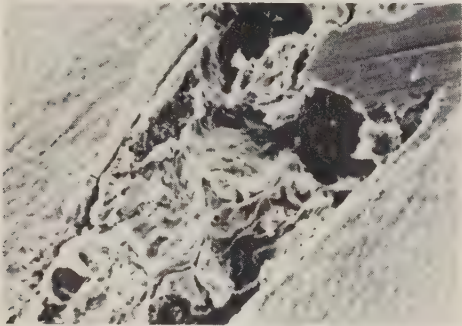


Fig 4 Scanning electron photomicrograph showing debris in the base of a fissure which probably prevented complete penetration of the sealant. The latter is shown as a homogenous mass in the upper right hand corner. x500.



Fig 2 Cross-section of a molar fissure. Note its extreme depth and fineness and particularly the small amount of enamel that covers the underlying dentine.



Fig 3 A fissure which does not open onto the surface in this particular section, but has openings in the body of the enamel. This appearance can be explained by assuming that the fissure takes an S-shaped or wavy course in the enamel.

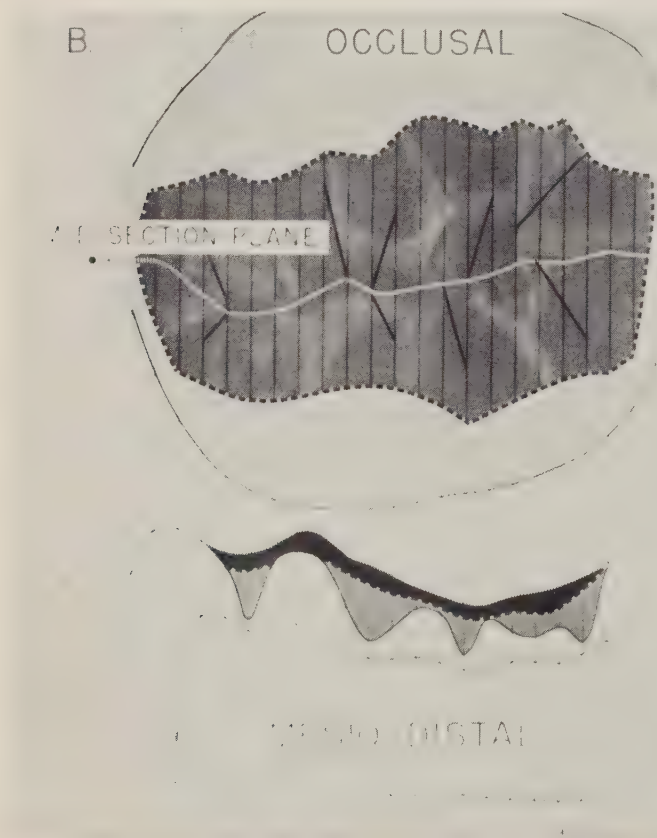


Fig 5 Diagrammatic representation of a typical fissure, illustrating approximately four areas where relatively little enamel covers the underlying dentine. The dark area in the upper part of the figure represents enamel that would be replaced by a restoration if all pits and fissures were mechanically removed. An adhesive should cover all pits and fissures on an occlusal surface.



Fig 6 A molar with spotty distribution of pits and fissures. Note the stains in the enamel at the orifice of the pits and fissures.

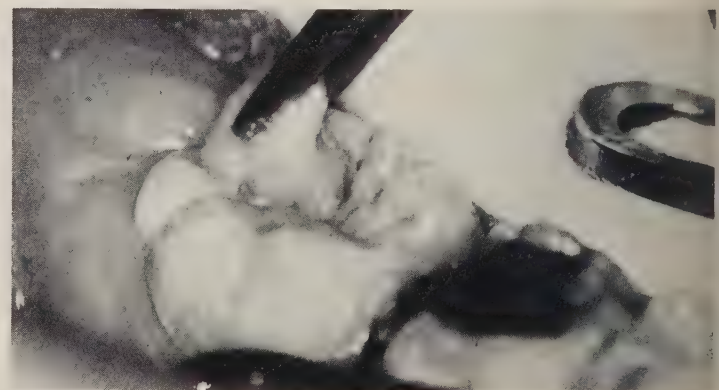


Fig 7 Acid conditioning solution being applied with a cotton pellet to a tooth surface that has been polished with pumice paste.

no drilling, but rather some chemical and physical modification of the enamel surface to render it more receptive to bonding. The procedure of covering pits and fissures with an adhesive resin should be simple, rapid, produce long-lasting bonding and, as with other presently available preventive measures, be capable of being done by auxiliary personnel. In addition, the procedure should not leave the tooth more susceptible to decay if the adhesive is lost from the surface. The high decay rates of the permanent molars render the latter consideration relatively unimportant.

This report presents some problems connected with adhesive sealing of pits and fissures. Also described is a simple method of adhesive application and the utilization of long wave ultraviolet light for polymerization of the adhesive.

Fissure morphology

Figure 1 shows two extremes in the appearance of pits and fissures. Both teeth were stained to reveal proteinaceous and other debris remaining at the orifice of the pits and fissures even after polishing with pumice. The tooth on the right has a wide, patent fissure extending the length of the occlusal surface. This fissure is so large that it could probably be filled directly with amalgam or cement without drilling and should certainly present no difficulty for sealing by an adhesive. The occlusal surface of the tooth on the left shows the more common type of distribution of pits and fissures. To restore such a surface adequately with amalgam would require extensive cavity preparation to eliminate the multitude of pits and fissures. Any one of these, if left untreated, could eventually succumb to caries. A satisfactory adhesive sealant must likewise cover all of the pits and fissures present on the surface to shield them from decay.

Because of their anatomical configuration,⁷ fissures can neither be completely cleaned nor filled with an adhesive. The best that can usually be achieved is debridement of the immediate orifice area of pits and fissures.

Figure 2 shows the extreme depth of a narrow molar fissure. Particularly notable is the small amount of enamel covering the underlying dentine. It is quite apparent that the rapid progress of decay in fissures, which results in early dentine penetration, can be attributed to virtual absence of enamel protection. Readers will also note the debris remaining in the fissure. The protection afforded by the cuspal configuration precludes adequate cleansing of this area by toothbrushing.

Figure 3 shows part of an enamel fissure which seemingly does not open onto the surface. Because

of its wavy configuration, the surface opening of the fissure can actually be found in the sections on either side of the one shown. Very little enamel covers the dentine at the base of the fissure. These sections were subjected to a strong water spray and washing during preparation, thereby cleaning out all or part of the naturally occurring debris. Consequently, the amount of debris present in the fissures is probably considerably less than exists in the natural state. Recent scanning electron microscopy by Gwinnett and Buonocore¹⁴ of teeth fractured or cut through the fissure areas supports these observations.

Figure 4 shows the interior of a fissure which is typically filled with naturally occurring debris. Figure 5 is a diagrammatic representation of a typical fissure and illustrates that in each tooth examined there were on the average approximately four areas along the fissure where there was relatively little enamel covering the underlying dentine. Unless covered adequately by an adhesive resin, any one of these areas could become a site for rapid penetration into the dentine. The dark area in the upper part of Figure 5 represents the enamel area which would be replaced by a restoration if all pits and fissures were mechanically eliminated.

At the beginning of our first clinical study of fissure sealing we realized that naturally occurring debris deep in the fissure could not be removed by standard dental prophylaxis procedures and that this debris would prevent the adhesive from penetrating the full depth of the fissure. Bonding of the adhesive to the tooth surface would have to depend largely on the inclined planes of the occlusal surface leading to the orifice of the pit or fissure. Cueto and Buonocore¹⁵ and others have shown that naturally occurring debris sealed in the fissures by an adhesive does not produce decay even after two years as judged by clinical and radiographic examination. On the other hand, comparable unsealed control teeth frequently showed clinical or radiographic progress of decay into dentine during the same time interval. Recent studies may explain why debris or decayed tooth substance sealed in a fissure does not appear to produce further decay.¹⁶ In bacterial cultures from dentinal decay which had been sealed in by adhesives for one to two months, Handelman found a 50-fold reduction in the number of bacteria anaerobically cultivated on a medium capable of supporting growth of a broad spectrum of oral organisms. A number of samples showed no growth at all. Decay which had been left unsealed in control teeth showed profuse growth of micro-organisms, however.



Fig 8 A clear drop of sealant being applied by brush to an air-dried, acid conditioned tooth surface.

Sealing technique

The technique of sealing pits and fissures with an adhesive resin is as follows.

Figure 6 shows a molar with a spotty distribution of pits and fissures — a situation commonly encountered clinically. The tooth has been isolated with cotton rolls. The stains in the enamel at the orifice of the pits and fissures will be the subject of further comment.

A phosphoric acid conditioning solution is used to prepare the surface for bonding (Fig 7). It is carried to the tooth surface on a cotton pellet. The conditioning solution, which should wet the occlusal surfaces completely but not flood them, is moved gently over the enamel by means of the cotton pellet up to the tips of the cusps and the edges of the marginal ridges. This step takes approximately 60 seconds. The conditioning solution is then thoroughly rinsed off with a water-air spray and the washings removed by suction. New cotton rolls are inserted to isolate the tooth from saliva, and the conditioned surface is dried with warm compressed air for about 10 seconds. This is important because laboratory experiments have shown that the etched enamel surface rapidly acquires a coating of salivary constituents which renders the surface less favourable for bonding. The air dried, conditioned surface should have a uniform, dull, satiny appearance, devoid of all of the natural gloss. Uniform etching will tend to produce more uniform bonding by reducing or eliminating areas of non-attachment between adhesive and enamel surface. Such areas could act as stress concentrators causing bond disruption by relatively



Fig 9 Nuva-Lite ultraviolet lamp used with UV-activated resin for fissure sealing. The lamp produces long wave ultraviolet light of 3,660 Angström units.

small forces. The stains at the orifice of the pits and fissures usually remain much as they were prior to acid etching. According to recent scanning electron microscope studies,¹⁴ the acid conditioning solution does not seem to affect these areas as much as the less stained inclined planes. These dark areas probably represent enamel that had previously been decalcified by oral acids and then impregnated by proteinaceous or pigmented material. Although these resistant areas, usually called brown spots, are a common finding on the smooth proximal surfaces, they offer little protection against the type of caries which is characteristic of pit and fissure lesions. In such lesions decay tends to progress more in depth rather than laterally, resulting in the rather common finding of an explorer point size hole in the enamel which mushrooms into a much larger dentinal cavity.

Figure 8 illustrates how the clear adhesive (Nuva Seal, L.D. Caulk Co, Milford, Delaware) is brought to the enamel surface by means of a camel hair brush. At this point the tooth surface must be dry and there can be no compromise on this requirement. The adhesive is best deposited on the surface immediately after it has been dried with warm, compressed air. Warm, compressed air does not cool the enamel surface to favour moisture condensation which would interfere with the establishment of a bond between adhesive and enamel. In addition, care should be exercised that the air line does not contain water or oil. The former prevents adequate drying, while oil hinders bonding. For similar reasons topical fluorides should not be applied on etched surfaces. However,



Fig 10 Hardened, glass-like surface of the polymerized resin supports the tine of an explorer.

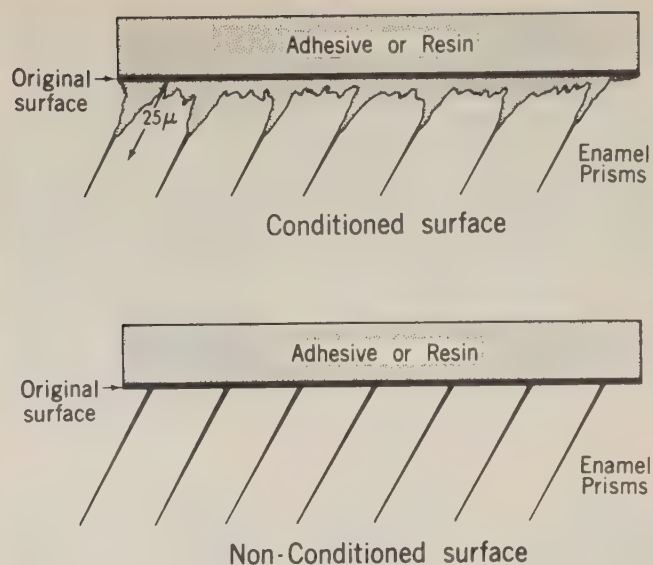


Fig 11 Diagrammatic representation of a section through a row of enamel prisms with penetration of resin into spaces produced by acid conditioning. The resin, in combination with protein matter, forms the prism-like tags.

fluoride applications can be made prior to etching or subsequent to adhesive application.

The adhesive is first painted on the deepest parts of the clean, dried enamel surface and then lapped towards the tips of the cusps but not extended beyond the etched area. The amount of adhesive applied will depend on the depth of the fossae and the occlusal relationship. This can be roughly appraised before starting treatment and the amount of adhesive regulated accordingly. Occlusal interference has not been a problem with fissure sealing in our studies and any slight interference adjusts itself in a few hours. Because the adhesive will not harden until exposed to the ultraviolet light, there is no need to rush. Adhesive can be added or removed and all parts of the surface covered as required and as desired. The shiny appearance of the tooth surface indicates where the adhesive has been applied and is easily visualized with all pits, fissures and hairline crevices filled. The application of the adhesive should take about 15 seconds.

Figure 9 shows the ultraviolet lamp (Nuva Lite, L.D. Caulk Co, Milford, Delaware) with the ultraviolet light polymerized adhesive here described. This lamp is of the proper intensity to polymerize the resin, including that which may penetrate the enamel in depth. It produces long wave ultraviolet light of 3,660 Angström units. The safety of this wave length of ultraviolet light is well documented in the medical literature. The ultraviolet light is transmitted through a clear quartz rod, the flat end of which is placed about 1mm from the tooth surface. After about 10 seconds, the surface of the adhesive is hard and the end of the rod may be rested on the tooth surface for the remaining 20 seconds of exposure required. There is no heat from the quartz rod nor is any sensed from the polymerization of the adhesive.

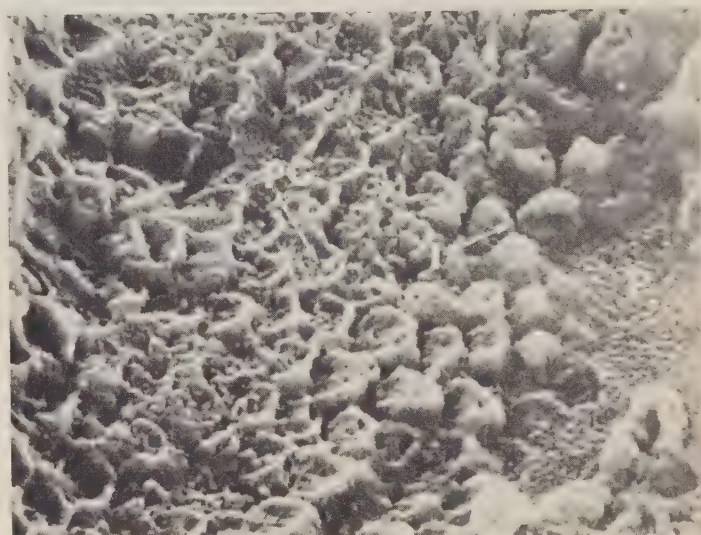


Fig 12 Scanning electron photomicrograph of enamel surface after etching with 50 per cent phosphoric acid showing three different dissolution patterns. In some areas, dissolution of prism cores (PC) is predominant. In other areas, periphery of prism (P) is dissolved preferentially and in other locations (P) a pitted appearance is observed. These features, three to four prisms apart, suggest variation in chemical composition. $\times 1,200$.

The end of the quartz rod is held about 1-2 mm above the adhesive for about 30 seconds. The uncovered enamel appears bright in ultraviolet light whereas the adhesive is darker. By moving the rod end back and forth across the tooth surface, all parts of the adhesive are exposed to the ultraviolet light assuring complete polymerization.

Figure 10 illustrates the hardened, glass-like surface of the resin supporting the point of the explorer. The resin is normally quite smooth although an occasional catch may be noted. This is



Fig 13 Comb-like tags resembling enamel prisms project from the edges of the adhesive in the upper part of the figure after the enamel, which was originally in contact with the adhesive, has been dissolved away by acid.

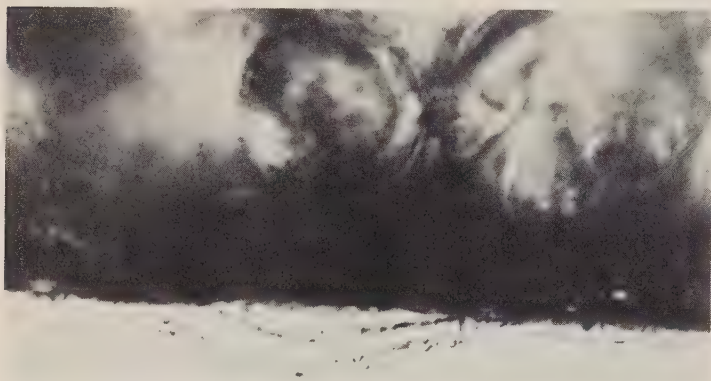


Fig 14 A photomicrograph showing the tags in an escalloped pattern representing areas of attachment and detachment of the tags to the undersurface of the adhesive.

due to air bubbles that may be present on the surface prior to polymerization. When the resin hardens the bubbles break and leave small depressions. These small depressions can be ignored. Larger depressions, however, when they occur, are filled by quickly reapplying a dab of adhesive over them and re-exposing to the ultraviolet light.

The transition from adhesive surface to enamel surface is virtually imperceptible even to a sharp explorer point. A properly polymerized adhesive should resist flaking, chipping or dislodging by the tip of a sharp, sickle-type explorer. It has been our experience, on the basis of laboratory studies, that when an adhesive passes the above test, its bonding to enamel will also generally survive 100 hours in boiling water with intermittent cycling in water at 4°C.

The adhesive is presently being evaluated as a vehicle for therapeutic agents. For instance, fluoride incorporated in the adhesive could be slowly leached out by oral fluids to provide a source of this ion for protecting neighbouring enamel surfaces against caries.

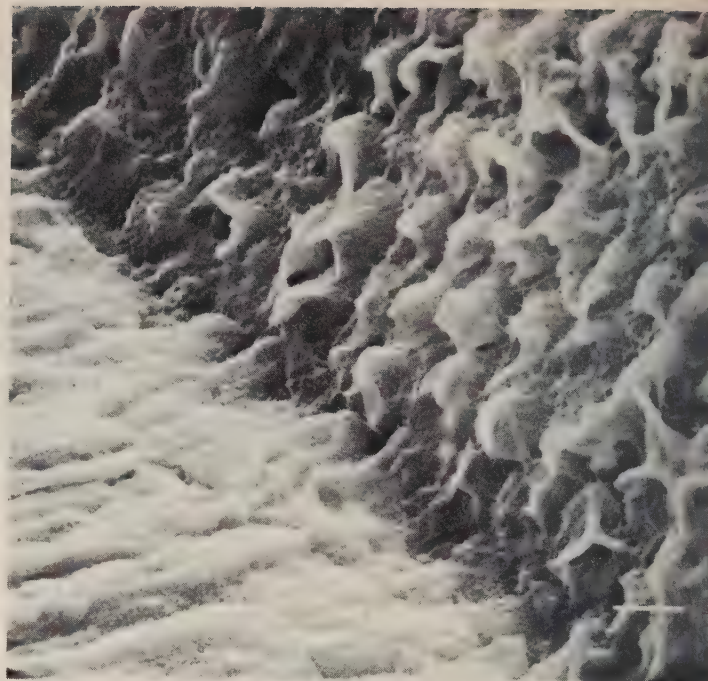


Fig 15 Scanning electron microscopic view of part of the undersurface of an adhesive on the right after the enamel on the left, to which it was bonded, has been partly dissolved. Note the projections which represent adhesive that has penetrated the microspaces originally present on the enamel surface. Tags tend to be finer, deeper and more numerous with a more liquid, lower viscosity adhesive.

Bonding mechanism

Figure 11 shows diagrammatically one means by which the adhesive is believed to bond to bovine enamel surfaces.¹⁷ It is now known that similar mechanisms account for bonding to human enamel. The lower half of the illustration shows a resin adhesive applied to an unetched enamel surface. The natural smooth enamel surfaces are most likely to be low energy surfaces as a result of their interaction with various chemical constituents of the oral environment and hence are not conducive to bonding. Moreover, if some bonding is established initially to natural surfaces, it is generally destroyed by short periods of water immersion. Acid conditioning, in addition to removing small amounts of surface enamel and organic deposits, tremendously increases surface area by creating microspaces in the enamel between the prisms as well as by roughening prism ends as shown in the upper half of the figure.

Figure 12 shows a scanning electron microscope view of an etched human enamel surface which produces a somewhat different pattern than bovine

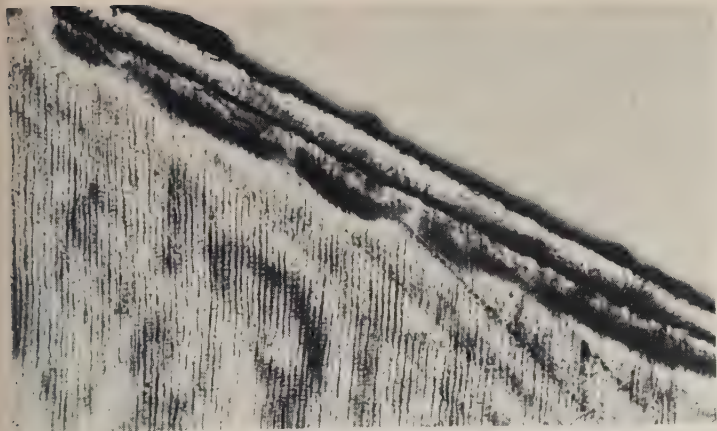


Fig 16 In-vitro acid conditioned "white spot" with a clear bond of adhesive bonded to its surface. The lobulated appearance of the white spot is a rather common pattern. x64.

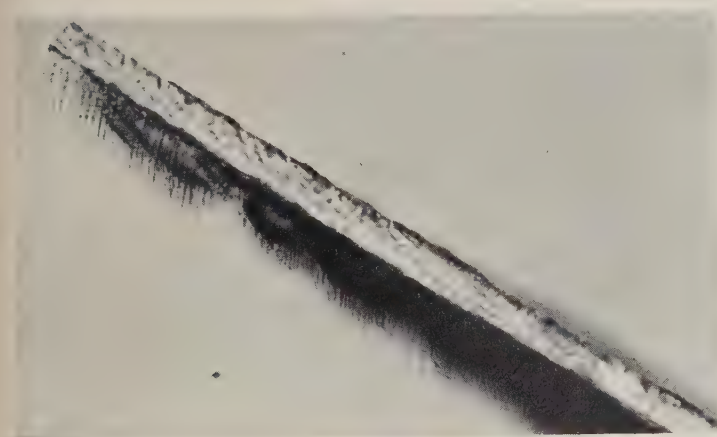


Fig 17 High power view of Figure 16 several hours after exposure to hydrochloric acid. The "white spot" area remains attached to the adhesive and appears as a replica of the enamel with markings of prisms and striae of Retzius. Areas of birefringence were noted in the bulk of tags when examined by polarized light representing retentions of enamel mineral in the white spot. x160.

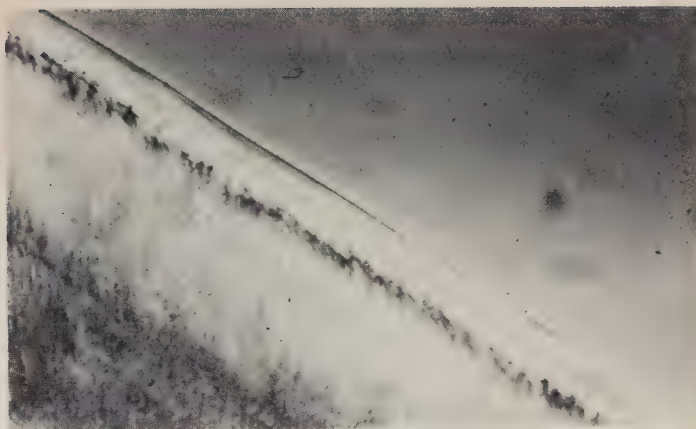


Fig 18 Cross-section of a primary tooth with a prominent, laminated appearing, aprismatic layer covering the enamel surface.



Fig 19 Scanning electron photomicrograph of an aprismatic enamel surface etched with 50 per cent phosphoric acid for two minutes. Sporadic rod ends are faintly visible on otherwise relatively smooth surface. x2,500.

enamel. Prism cores (PC) are dissolved in some areas, while interprismatic areas (I) are dissolved in others. Flat areas are also present. When the adhesive is applied to such an etched surface, it tends to fill these microspaces by capillarity, entrapping and encapsulating whatever organic matter may be present therein. These adhesive-organic matter projections which we call "tags," are considered responsible in large measure for an intimate mechanical bonding of adhesive to the enamel surface.

It should be emphasized here that when the adhesive is applied to a dry enamel surface it is most likely attracted to it by the physical forces of Van der Waals, filling in the microspaces by strong capillary attraction. This is adhesion. How long these physical forces of adhesion can resist displacement by water in the oral environment is

not known. Hence, when we refer to the bonding as due primarily to mechanical retention, we are simply describing the end result of a process which undoubtedly involves in the first instance the physical forces of adhesion which may not survive in the wet oral environment.

The tags can be readily observed by cutting thin sections through the adhesive and enamel and dissolving the enamel in acid. (Fig 13). The comb-like "tags," which resemble enamel prisms, are seen projecting from the edge of the adhesive in the upper part of Figure 13 after the enamel, which was originally in contact with the adhesive, has been dissolved away by acid.

Figure 14 shows the tags in an escalloped pattern representing areas of attachment and detachment of the tags to the undersurface of the adhesive.

Duration	Permanent teeth			Primary teeth		
	1 year	1½ years	2 years	1 year	1½ years	2 years
No. of surfaces	146	119	113	54	54	40
% retaining adhesive	100	96	87	100	83	50
% carious						
Control	47	51	60	28	39	38
Experimental	0	0	1	0	0	5
% caries reduction	100	100	99	100	100	87

Figure 15 shows a scanning electron microscope view of part of the undersurface of an adhesive on the right after the enamel on the left, to which it was bonded, has been partly dissolved. Projections of the adhesive that has penetrated the microspaces originally present on the enamel can be clearly seen. Tags tend to be finer, deeper and more numerous with a more liquid, lower viscosity adhesive (Nuva-Seal) than that employed in Figure 15.

The fact that the adhesive appears to penetrate the enamel is an additional favourable aspect of fissure sealing. Even if the external adhesive coating is completely worn away by mastication, there may still be some protection from the presence of adhesive in the surface enamel. We now believe that adhesives lost after application were applied incorrectly. Under such conditions "tag" formation is minimal or inadequate for retention. Impregnation of the enamel surface may also be useful over proximal surfaces where space may limit the external deposition of adhesive. Current research also indicates that early carious lesions as represented by white spot areas of demineralization can be impregnated to various degrees by adhesive to render them resistant to acid dissolution.¹⁸

Figure 16 shows a section of an artificial white spot lesion from the interproximal surface of a tooth that was coated with adhesive prior to sectioning the tooth. The adhesive layer appears light over the darker white spot layer in the enamel surface. The white spot area remains bonded to the

clear adhesive and resists dissolution long after the remainder of the enamel has been dissolved away by eight hours' exposure to 10 per cent hydrochloric acid (Fig 17). The prism-like tags are prominent below the main body of the white spot lesion and suggest deep penetration of the adhesive.

Table 1 presents the results of a two year study of a single application of an ultraviolet light polymerized adhesive to the pits and fissures of permanent and deciduous teeth.^{19,20} The most important finding was the almost complete protection, a 99 per cent caries reduction, afforded the pits and fissures of permanent teeth after two years following a single application of an adhesive resin to seal these vulnerable areas. At the end of the second year, the adhesive was retained on 87 per cent of the permanent surfaces with 13 per cent showing complete loss of adhesive coverage. The control enamel surfaces by comparison showed a 60 per cent caries incidence. These findings attest to the high degree of reliability of coverage and protection that can be obtained with adhesive sealing, important considerations from a clinical aspect. While there was no loss of adhesive coverage, the primary teeth at the one year period showed considerably more loss of coverage than the permanent teeth after 1½ and two years. The degree of protection against decay was nevertheless substantial for the primary teeth, which showed an 87 per cent caries reduction. Primary molars remain in the mouth for approximately eight years before exfoliation. On the basis of these results, it



Fig 20 Polarized light photomicrograph of a cross-section of an adhesive resin (R) bonded to enamel (E) showing white, homogeneous, aprismatic enamel layer (PL) on left side and removal of this layer by grinding on right side. x100.



Fig 21 Photomicrograph of the same cross-section as in Figure 20 but decalcified in hydrochloric acid. Only the adhesive resin remains with tags (T) attached to it where it contacted the etched enamel surface from which aprismatic enamel was removed. There are no tags on the left side where resin adhesive was bonded to the aprismatic enamel layer. x100.

would be possible with three or four applications to protect the occlusal surfaces of deciduous molars during their entire life span.

The greater loss of adhesive observed with deciduous teeth may be related to the presence of the aprismatic enamel layer generally found in primary teeth. Figure 18 shows a cross-section of a primary tooth with a prominent, laminated, aprismatic layer covering the enamel surface. When this layer is etched the resultant surface texture is relatively smooth compared to that observed in permanent enamel where pronounced hills and valleys are produced by dissolution of prism cores and interprism areas. Figure 19 shows the surface of an aprismatic layer etched by phosphoric acid and examined with a scanning electron microscope. Such a surface is not conducive to the formation of the typical tags. Figure 20 shows a cross-section of a primary tooth where the aprismatic layer was ground off from the upper right half of the enamel surface prior to etching and then the whole enamel surface was covered with adhesive. The same section is seen again in Figure 21 following demineralization in 10 per cent hydrochloric acid. There are no tags below the adhesive in the lower left region of the illustration that was in contact with the aprismatic enamel layer, whereas the undersurface of the adhesive at the upper right which contacts prismatic enamel shows the typical tags suggesting adhesive penetration into the enamel. In the clinical application of adhesives for caries prevention somewhat longer conditioning times may be beneficial for primary teeth.

It is interesting to speculate whether traces of adhesive in the fissure or within the enamel surface contribute to diminished caries incidence in teeth from which bulk adhesive has been lost. Our laboratory studies have shown that enamel impregnated with adhesive resists decalcification when subjected to acid. In addition, fluoride added to the adhesive could leach out and be acquired by the fissure enamel surface to provide protection even after loss of bulk adhesive. This possibility is supported by preliminary unpublished *in vitro* evidence from our laboratories that fluoride ion, incorporated in the adhesive as water soluble compounds, slowly leaches out when the adhesive is exposed to water.

The permanent teeth selected for this study generally presented well defined pits and fissures and deep fossae and as a rule were found in mouths already showing decay in other teeth. Caries-free individuals with relatively well coalesced occlusal surfaces were excluded from the study because of the presumed natural protection inherent in such morphology. These considerations should be used as guidelines in the clinical application of adhesives for caries prevention.

Several additional clinical observations reflect on the favourable behaviour of the adhesive. For instance, there was no evidence of fracture or crazing of the retained adhesive. Adhesive surfaces were as a rule relatively smooth and free of debris with little or no change from the original colour. The enamel surfaces from which loss of adhesive occurred appeared normal and could not be distinguished from the control enamel surfaces that

had not been acid conditioned. When loss of gross adhesive occurred, it was complete except for any subsurface adhesive material.

Conclusion

Adhesive sealing of pits and fissures could be an important adjunct in a caries preventive program since it is intended for those caries susceptible areas least benefited by fluoride.

The research was supported in part by a grant (DE-2969) from the US National Institute of Health.

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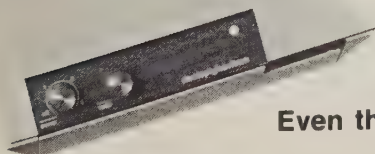
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Traumatic (haemorrhagic) bone cyst of the mandible: Report of an unusual case

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Traumatic haemorrhagic bone cysts are comparatively rare benign lesions which are almost exclusively found in the mandible and which seldom occur after the third decade of life.

These lesions, although referred to as bone cysts, in fact, have no epithelial lining and, therefore, sometimes are referred to as false cysts.

An extremely detailed analysis of these unusual lesions was carried out by Howe¹ and an increasing number of case reports and reviews, notably those of Morris et al,² and Huebner and Turlington³ have appeared in recent years. Despite this, however, the aetiology and pathogenesis still remain uncertain. The clinical and radiographic features do not, as a rule, enable a definitive diagnosis to be made and exploration of the involved area is essential. To emphasize this point, frequent reference is made in the literature to Waldron's⁴ case which was misdiagnosed as an ameloblastoma and led to an unnecessary hemisection of the mandible in a young female patient. Clinically, adolescent males are more commonly affected and most lesions occur in the region of the mandible between the cuspid tooth and the ascending ramus. It is considered that approximately two-thirds of cases are accidentally discovered on routine radiographic examination and only 25 per cent present

because of swelling.⁵ Cases have been reported, however, which presented with pain, paraesthesia, displacement or loosening of teeth and even pathological fracture.⁶ The paucity of cases reported after the third decade may be due to the fact that spontaneous resolution may occur without surgical interference.

Radiographic features play an important part in suggesting the diagnosis. A scalloping effect between the roots of the teeth is frequently referred to. However, Howe¹ pointed to the great variability of the radiographic appearance and Jacobs⁷ described the lesion as being the great imitator.

The following case is reported since it illustrates some less common clinical and radiographic features including delayed eruption of the permanent teeth, a finding not previously recorded.

Report of Case

History and examination — An 11 year old white boy was referred by his dentist to the Oral Surgery Department of the University of Manitoba with a history of a hard asymptomatic swelling on the buccal aspect of the right mandible adjacent to the

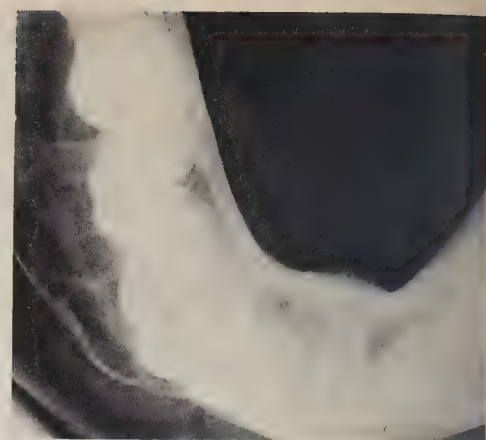
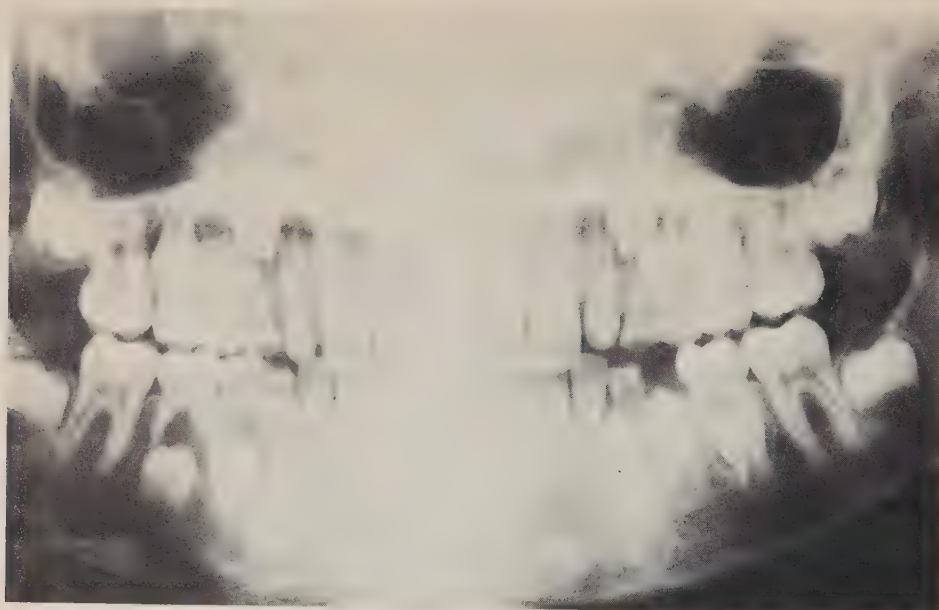


Fig 1 (left) panoramic radiograph showing delayed eruption of the right mandibular cuspid and bicuspid. Note the suggestion of a poorly defined radiolucency in that area.

Fig 2 (above) occlusal radiograph showing obvious expansion and trabeculation in the area of the lesion.

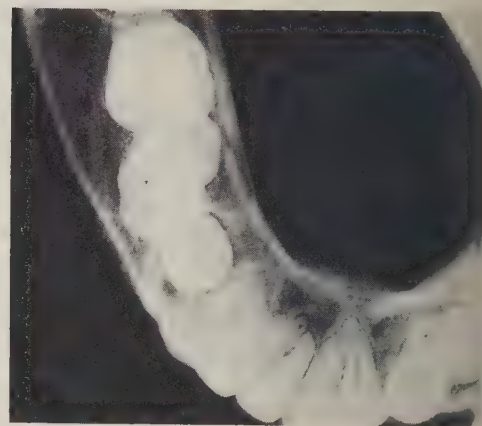


Fig 3 (left) panoramic radiograph 10 months postoperatively. Note the improvement in eruption in relationship to the right cuspid and first bicuspid.

Fig 4 (above) occlusal radiograph 10 months postoperatively showing complete bony resolution and restoration of contour of the mandible.

primary molars which had been present for about a year. No history of trauma could be elicited. Both primary molars on that side were vital, quite firm and undisplaced. The first primary molar on the contra-lateral side had already exfoliated and the associated first permanent bicuspid was partially erupted. The swelling was smooth, bony hard, non-tender, and extended from the primary cuspid to the first permanent molar. The overlying mucosa appeared normal. Lingual expansion was not present and there was no cervical lymphadenopathy. Extra-orally, there was no obvious deformity over the right mental area.

The past medical history was non-contributory and physical examination revealed an otherwise healthy boy, normally developed for his age.

A complete blood count, serum calcium, phosphorus and alkaline phosphatase assays were carried out and these were found to be within normal limits.

A panoramic view of the mandible (Fig 1) revealed a poorly defined radiolucency which corresponded to the site of the lesion, clinically. In addition, the permanent mandibular right cuspid and bicuspid were less advanced in their eruption than their counterparts on the left side. There was no evidence, however, of resorption of the roots of the primary molars and only minimal resorption of the primary cuspid in contrast to the corresponding primary teeth on the left side.

An occlusal view (Fig 2) showed expansion and thinning of the buccal cortical plate. The thin

radiopaque margin was neither as well defined nor as smooth as that associated with an odontogenic cyst. Trabeculations suggesting a multilocular appearance were present, but there were no areas of irregular discrete calcification as might be associated with fibrous dysplasia.

Treatment — A tentative differential diagnosis of giant-cell tumour, traumatic bone cyst or ameloblastoma was made and the patient was admitted to hospital for exploration of the lesion. This was carried out under general anaesthesia with nasotracheal intubation. A buccal mucoperiosteal flap was raised from the incisor region to the external oblique ridge on the affected side. A small perforation of the buccal plate was noted and this was enlarged with bone rongeurs. A cavity, devoid of lining and containing a small amount of sero-sanguineous fluid was found. The crowns of the unerupted bicuspid teeth were easily visible at the base. Fragments of bone were removed for histological examination and bleeding was stimulated by smoothing the sharp bone edges of the cavity and gently scraping the internal wall. Oxidized regenerated cellulose gauze was packed into the cavity and the flap replaced with 000 silk sutures.

Healing was uneventful and the patient was discharged on the second postoperative day.

Microscopic examination — The specimens consisted of several thin fragments of bone partially covered by thin connective tissue areas and exhibited marked osteoclastic activity together with some new bone formation. The connective tissue membrane showed no evidence of any epithelial lining. The lesion was therefore defined as a traumatic bone cyst.

Follow-up — Clinical and radiographic examinations were carried out at two months and 10 months postoperatively. Bony resolution of the lesion had occurred at 10 months and the permanent mandibular cuspid and first bicuspid on that side were now erupting normally. The second bicuspid, however, appeared to be still lagging (Fig 3,4).

Discussion

Since the report of the first case of traumatic bone cyst by Lucas⁸ in 1929 about 160 cases have appeared in the literature. Although an increasing number have been reported in the last decade, probably because of the increased use of complete intra-oral radiographic surveys and the intro-

duction of panoramic radiographs, the lesion must be regarded as comparatively rare. The present case was interesting in that the eruption of the teeth directly related to it was delayed, a finding not previously reported; and while one can only speculate as to the cause, it suggests the possibility of pressure within the cavity. Other findings which were unusual were the marked buccal expansion, which is said to occur in only 25 per cent of cases,⁹ perforation of the cortical plate and the multilocular radiographic appearance which suggested a less benign lesion. This case emphasizes the point made by Howe,¹ that the diagnosis must await surgical exploration for confirmation, and that one should keep this clinical entity in mind when the differential diagnosis of radiolucent areas of the mandible is considered.

Summary

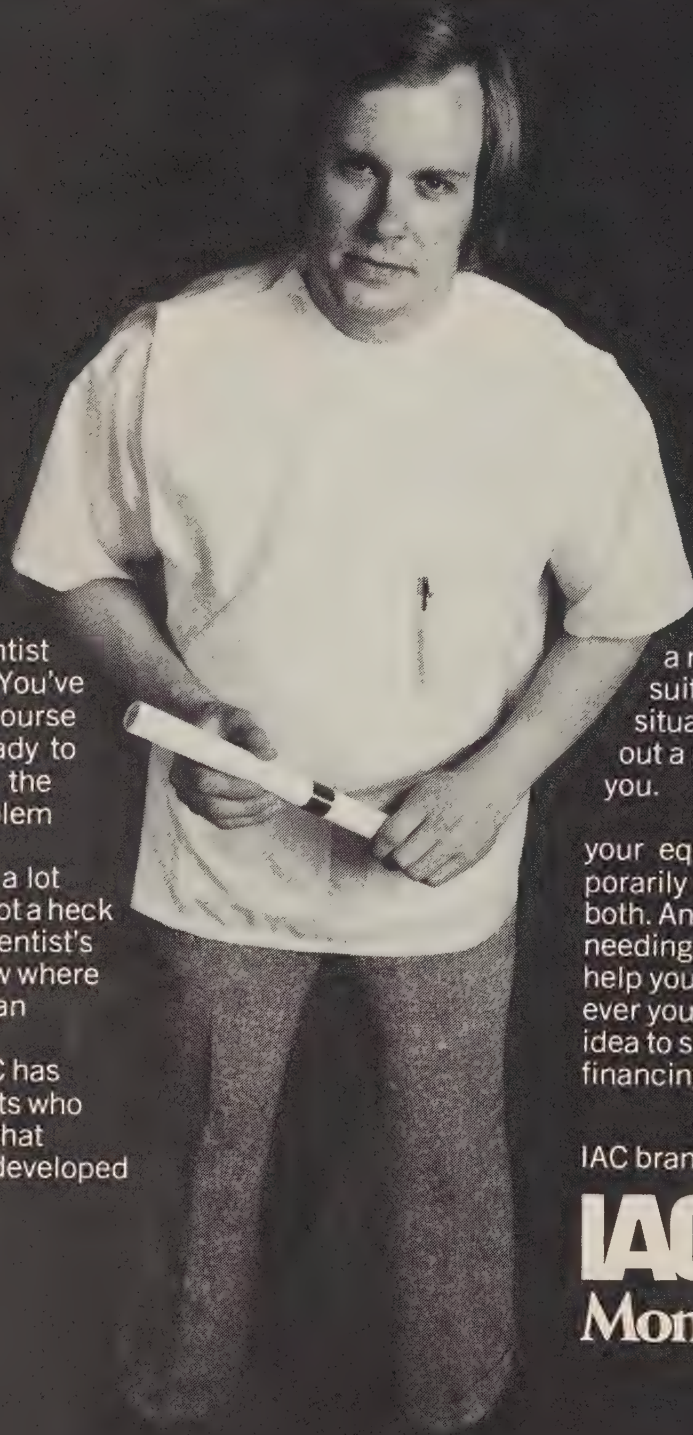
A case of traumatic bone cyst is reported which illustrates some of the less common variations of the clinical and radiographic features including delayed eruption, a finding not previously reported.

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ONTARIO — Paris. Associate required. Present associate leaving after 3½ years. Small town on outskirts of city of 70,000 in 60 mile radius of Toronto. Practice covers all facets of general dentistry. Reply 7 Grand River St. N. Paris, Ont. N3L 2L9.

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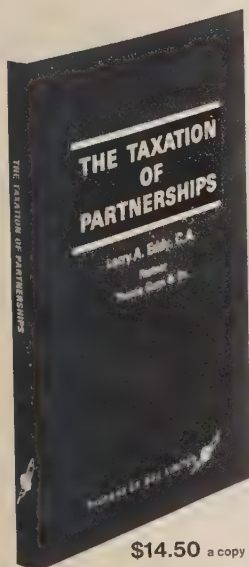
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BRITISH COLUMBIA — New Westminster. Locum required for month of April, 1974 for general practice Vancouver area. Experienced practitioner preferred. Office centrally located in medical dental building and is fully equipped with x-ray units and cavitron in both operatories. Reply CDA Box No. 1344.

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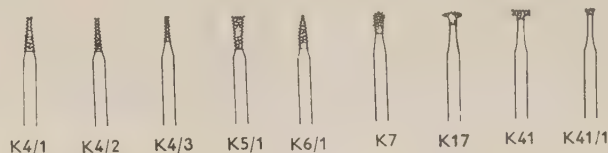
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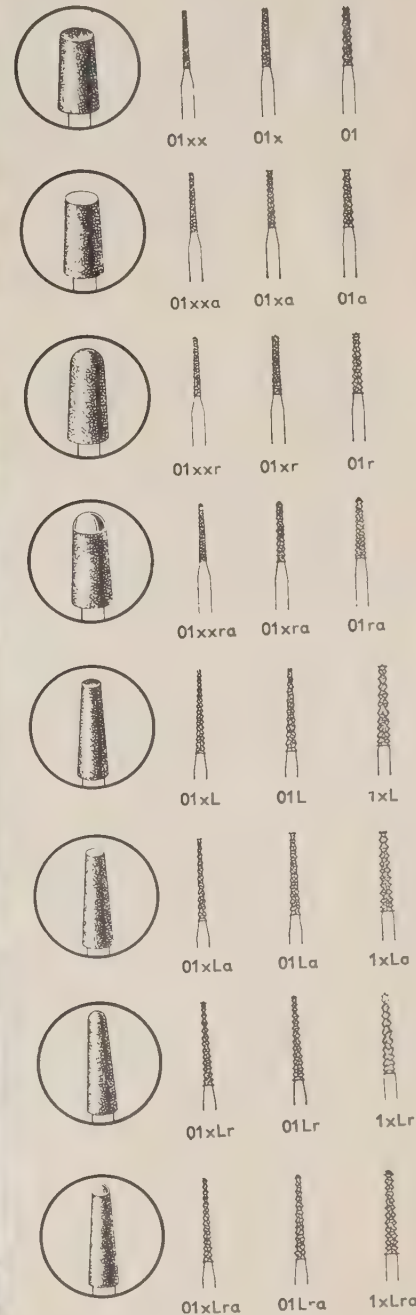
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Applicants must possess a license to practice in Ontario and display an aptitude for innovation, teaching, research and administration.

Typed applications, including a curriculum vitae and the names of at least two references, should be submitted to: Department of Social Dentistry, Faculty of Dentistry, the University of Western Ontario, 1151 Richmond Street, London, Ontario, N6A 3K7.

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Duties can be varied according to the candidate's qualifications as the Department incorporates divisions responsible for the teaching of Oral Medicine, Oral Diagnosis, Periodontology, Radiology and General Medicine.

Applications, giving full details and names and addresses of three references should be sent to: Dr. R.I. Brooke, Professor and Chairman, Department of Oral Medicine, Dental Sciences Building, University of Western Ontario, London, Ontario.

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The President,
The Royal Dental Hospital of Melbourne,
711 Elizabeth Street,

MELBOURNE; 3000 Victoria, Australia.

Applications close on Friday 15th, February, 1974.

Further particulars may be obtained from the undersigned.

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